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FT-2000



FT-950



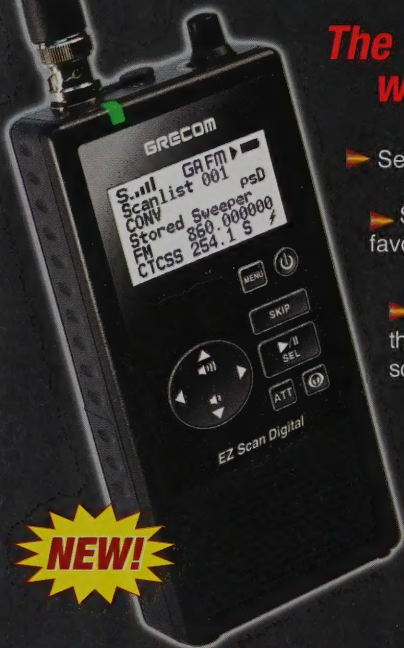
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World's Top DX'ers**

GRECOM

PSR-800 EZ Scan Digital P25 Scanning Receiver

The first scanner that lets you hear what you want to hear without knowledge of local communication systems!



- ▶ Select only the local systems you want to monitor!
- ▶ Record up to 50hrs of Incoming Transmissions on to the 2GB MicroSD Memory card.
- ▶ Special requests? No problem – you can add favorite frequencies with the included PC software.
- ▶ The media player type menu allows you to instantly access trunking systems and conventional frequencies used by Public Safety, Government, and Businesses throughout the United States (and Canada) without training, without a manual - even if you have never operated a scanner before.
- ▶ The PSR-800 combines simple controls like those used in an MP3 player with the power and sophistication of a state-of-the-art scanning receiver!
- ▶ Select your state, your county and view a list of objects you can monitor. Select the boxes of the items you want to hear. It is very much like using a MP3 player - that is, if you could buy an MP3 player with all music already installed! Visit your favorite HRO Store today to find out more about the PSR-800!
- ▶ Designed to provide unprecedented ease of use, for beginners and experts!
- ▶ Includes a 2GB micro SD Card equipped with a special onboard library containing the entire USA and Canada database for all known digital & analog trunking systems and many conventional frequencies*.

Scanning just got easier! www.greamerica.com

GRE AMERICA INC.

425 Harbor Blvd, Belmont, CA 94002



*Cellular bands blocked. Mobile use of this device maybe unlawful, or require a permit, in some areas. Check with local authorities for regulations in your area Product may vary from depiction.

The Alinco G7T. Get ready for action! Hear signals that you have never heard before!

The G7T tunes 0.530-1299.995MHz* continuously, and you can enjoy full duplex receive in combination with 144/430/1200MHz amateur bands. AM and WFM modes allow you to hear aviation and broadcast bands. And with broadcast preset memories and built-in AM bar antenna, listening is easier than ever. Enjoy a variety of scan modes and options that include Timeset scan, 50 pair of programmable scan memories, Timing adjustable priority scanning. Alinco's patented Channel-Scope visualizes the presence of radio signals on the display. There are also two modes of bug detector functions. *Restrictions may apply to frequency combinations for Full-duplex QSO.

Customize the G7T for your personal preferences.

Set the parameters to suit your needs and likes. Selectable display language (English/ Japanese) lamp function and display contrast and brightness. Select Auto-Power Off / Battery save function. Turn sounds (beep, bell, end beep) on or off. Set the transmitter for VOX / TOT / BCLO. Control the DTMF burst timing, link your scan banks, set priority scan-timing, memory skip functions and more. Personalize the G7T to make it "YOUR G7T". Visit your favorite HRO store today to find out more!



ALINCO

www.alinco.com

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Dual Band



NEW!

**Rugged,
pocket-sized
2m / 440 MHz**

DJ-V57T

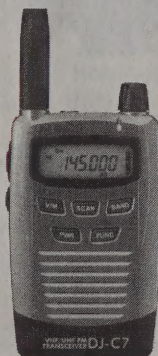
\$Call — HRO Discount Price

Small size fits in the palm of the hand. 144 / 440 MHz dualband transceiver. Three power levels with high of 5 W. Water resistant body made of polycarbonate. Direct keypad input. Alphanumeric display. 39 CTCSS tone (encode + decode) and 104 DCS. 200 memories. Tone burst function.

**Credit Card Sized
2m / 440 MHz
DJ-C7T**

\$Call — HRO Price

This compact 2m / 440 MHz dual band has standard or non-standard splits, AM air band receive, CTCSS encode / decode, 200 memories, volume / squelch control, key lock, auto-power OFF, mike / earphone / DC jack.

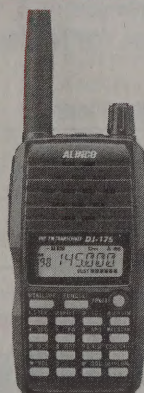


Single Band HTs

DJ-175 - 2 m

\$Call — HRO Price

The DJ-175 is an economical 2m HT with an alphanumeric display, direct frequency input, 200 memories plus 1 call channel, 39 CTCSS tone squelch (encode/decode) wire cloning capability, 3 levels of output (5 / 2 / 0.5 W), DTMF encoding.



DJ-V17T - 2 m

DJ-V27T - 220 MHz

DJ-V47T - 440 MHz

\$Call — HRO Prices

These HT's are compact full-powered FM HT's that are submersible 3ft for 30 minutes. They are perfect for outdoor activities. Direct frequency input from keypad. 200 memories plus one call channel. 39 CTCSS encode-decode settings. Digital coded squelch.



Tri-Band

2 m / 440 MHz / 1.2 GHz

DJ-G7T

\$Call — HRO Price



The DJ-G7T tunes 0.531-1300 MHz* continuously. Full duplex receive with 144 / 430 / 1200 MHz bands. AM and WFM modes allow you to hear aviation and broadcast bands. Scan modes and options include 50 pair of programmable scan memories. Timing adjustable priority scanning and Alinco's Channel-Scope — visualize the presence of radio signals on the display. Output power up to 5 Watts on 2 m. *Cell band blocked.

Receiver

Wide Band Receiver

DJ-X11T

\$Call — HRO Price

Get the Power of a Desktop in a handheld!! It features: 2 VFO simultaneous receive; covers 0.05 to 1.299.99995 MHz in all modes; 1200 memories; sub-band coverage VHF 118-171 MHz and 336 to 470 MHz in AM/NFM; IQ signal that can be used with 3rd party software and discriminator output; easy to use twin dials; selectable tuning steps; 3 selectable scan speeds; freeware to operate as a software defined radio.



Power Supplies

DM-340MVT

This supply delivers high quality, steady DC at a maximum of 35 A (30A continuous) with a reliable protection circuit. Features V/A twin meters, forced air cooling fan, 16mm main terminals, 2 pairs of auxiliary snap-in and cigar socket output terminals and a fuse socket on the front panel. **HRO Price \$Call**



**Communications Grade
Switching Power Supply**

DM-330MVT



Compact, lightweight power supply for portable operations. Provides 32 amps peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit moves pulse noise. Short circuit protection. Front panel connections. Internal switch to convert voltage to 220V. Cigarette plug socket. **HRO Price \$Call**

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Desktop Receiver / Transceiver



NEW!
DX-R8T
- \$Call

150 kHz - 30 MHz SSB / CW / AM / FM / IQ
All Mode RECEIVER

Monitor SWL signals from aviation, navigation and data sources.

- IQ signal output allows use of third-party SDR software.
- Front and rear jacks make connections easy.
- Direct frequency input to the dual VFO system.
- Detachable front control panel mounting options.
- Large LCD display.
- Front speaker and powerful 2 W audio output.
- Rugged die cast chassis.
- Narrow ceramic filters (AM 2.4 kHz, SSB 1 kHz) and 0.5 kHz audio filtering for CW.
- 4-level RF amp / attenuator.
- IF shift and RIT.
- Noise blanker.
- 3 banks / 600 memory channels.
- Two sets of programmed search pairs and varieties of scanning modes.
- Auto power off, sleep timer, dial and key locks, RX indicator illumination.
- Computer utility software to manage settings and edit memories.
- Receiver current drain: 1.0 A.
- Receive circuitry: Double conversion superhetrodyne.
- IF Frequency: 1st 71.75 MHz, 2nd 455 kHz.
- Spurious and image rejection ratio: more than 70 dB.
- RIT range: ± 1.2 kHz.

DX-SR8T

NEW!
All Mode
TRANSCEIVER
150 kHz - 30 MHz
SSB / CW / AM / FM
- \$Call

The DX-SR8T covers the 160m to 10m amateur bands including 5.3 MHz in SSB, CW, AM and FM modes. Output power is 100 W SSB/CW/FM and 40 W in AM with low and super-low power settings for QRP operation. The general coverage receiver covers 135 kHz to 30 MHz in all modes. Receiver features are similar to the DX-R8T.

EDS-17

Front panel remote kit optional. 5m cable, front panel bracket, unit cover and hardware.

Specifications:

- Antenna impedance: 50 ohm unbalanced.
- Frequency stability: ± 1 ppm.
- Power requirements: 13.8 VDC $\pm 15\%$.

DR-06T 6 Meters
DR-03T 10 Meters
- \$Call

Catch the exciting world of the 6m and 10m bands with these rigs. The DR-06T covers 50-53.995 MHz and the DR-03T covers 28-29.695 MHz. Output on 6 m is 50 W and 10 m is 10 W. Both radios have convenient scan features, a variety of selective calling tones, theft alarm, ignition key on/off, direct frequency input and controls from the EMS57 key pad microphone.



Dual-Band



DR-635T

\$Call - HRO Discount Price

The DX-635T is a mobile / base VHF+UHF transceiver plus an expanded range receiver.

- Output on VHF: 50 / 25 / 5 W; UHF 35 / 20 / 5 W.
- 200 memories.
- Cross-band repeater functions.
- Large, 6 character alphanumeric display with selectable color illumination.
- Removable control head for remote mounting.
- Internal duplexer.
- CTCSS and DCS encode/decode plus four different tone bursts.
- CTCSS tone and SCS scan.
- Optional 1200 / 9600 bps packet (EJ-50U).
- Programmable VFO and memory scan modes.
- Air band reception.
- Receive frequencies: 87.5-107.995, 108-173.995, 335-479.995 MHz.

Alinco Mobile Accessories

Model	Item	DR-130T, 430T M06T, M03	DR-135T 235T, 435T	DR-140T 150T	DR-620T 635	HRO Price
EJ-40U	Digital voice board		*			\$Call
EJ-47U	Digital voice board				*	\$Call
EJ-41U	TNC unit		*			\$Call
EJ-50U	TNC unit				*	\$Call
PC-15B	Power Cord	*	*	*		\$Call
MB-130	Mounting Bracket	*		*		\$Call

Single Band



DR-135TMKIII
2 m

\$Call - HRO Price

2 meter FM and receive Airband (AM). Ignition key power control, theft alarm, 7 place alphanumeric display, front panel data input, optional internal packet module to use with APRS™, rear panel serial port connection. 100 memories, 10 autodial memories.

DR-235T

220 MHz - \$Call

DR-435TMKIII

440 MHz - \$Call
HRO Prices

Features a unique multifunction backlit microphone with direct frequency input. These 220 MHz and 440 MHz models can accept optional EJ-41U internal TNC or EJ-47U digital voice module. The MKIII TCXO supports a specification of ± 2.5 ppm frequency stability.

Alinco Handheld Specifications

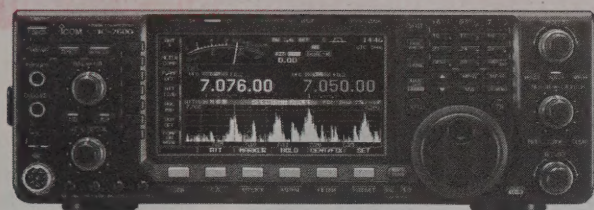
Model	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out **	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DJ-175T	2m / 440 MHz	3-7.6VDC	320 mA	70 mA	300 mW *	200	50	2k	<15 μ V	3.7	2.2	0.57	0.23
DJ-C7T	2m / 440 MHz	7.6 VDC	1.5 A	75 mA	5 W	200	50	2k	<2 μ V	4.23	2.28	1.43	0.54
DJ-G7T	2m/440 1240-1299.995	7.4 VDC	1.6 A	200mA	5 W †	1000	50	2k	<15 μ V	4.53	2.36	1.18	0.6
DJ-V17T	144-147.995MHz	7.2 VDC	1.4 A	250 mA	5 W	200	50	2K	<2 μ V	4.33	2.28	1.43	0.61
DJ-V27T	222-224.995MHz	7.2 VDC	1.4 A	251 mA	6 W	200	50	2K	<2 μ V	4.33	2.28	1.43	0.61
DJ-V47T	420-449.995 MHz	7.2 VDC	1.7 A	250 mA	4.5 W	200	50	2k	<25 μ V	4.33	2.28	1.43	0.61

** Power output is determined by choice of battery pack. † at 13.8VDC * 500mW with 6 VDC

Alinco Mobile Specifications

Model	Primary Use	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DR-135TMKIII#	Mobile	2 m	13.8 VDC	11 A	400 mA	5/10/50 W	100	50	600	<16 μ V	1.57	5.58	6.83	2.2
DR-235T	Mobile	222-225 MHz	13.8 VDC	8 A	400 mA	5/10/25 W	100	50	600	<16 μ V	1.57	5.58	6.83	2.2
DR-435TMKIII#	Mobile	430-450 MHz	13.8 VDC	10 A	400 mA	5/10/35 W	100	50	600	<16 μ V	1.57	5.58	6.83	2.2
DR-03T	Mobile	28-29.695 MHz	13.8 VDC	11 A	600 mA	10 W	100	50	600	<25 μ V	1.57	5.58	6.83	2.2
DR-06T	Mobile	54-53.995 MHz	13.8 VDC	11 A	600 mA	50 W	100	50	600	<25 μ V	1.57	5.58	6.83	2.2
DR-635T	Mobile	2m/440 MHz	13.8 VDC	11 A	1.2 A	50 W/35 W	50	50	600	<16 μ V	1.6	5.6	7	2.43

* Expand to 100 with optional EJ-19U †Expand to 240 with optional EJ-23U #TXCO with ± 2.5 ppm frequency stability.



IC-7600

The Flagship's Lineage

The IC-7600 pushes performance to the pinnacle with the latest DSP technologies developed for the IC-7800 / 7700. More than 45 years of analog circuit expertise give the IC-7600 the performance advantage. The flagship lineage: dual DSP units, 3 kHz 1st (roofing) filter, double-conversion superheterodyne. Supplied with DC power cable, HM-36 hand mic, spare fuses, MB-121 handle, and CW key plug.

- Dual DSP units for transmitter / receiver and high resolution real time spectrum scope.
- 2-100 W output with 1-30 W on AM and a built-in high speed automatic antenna tuner.
- Receives 0.3 - 60 MHz.
- Transmits on amateur HF frequencies plus 6 meters.
- Three built-in 1st IF (roofing) filters: 3, 6, and 15 kHz.
- 5.8 inch WQVGA (400 x 240 pixel) TFT display with long-life LED backlighting.
- Front & rear USB connectors for keyboards, flash memory drives and PCs.
- Built-in PSK and RTTY operation with a USB keyboard. A PC is not required.
- 104 dB dynamic range and +30 dBm third-order intercept point.
- Double conversion superheterodyne receiver dramatically improves inband IMD.
- Dual AGC loops (one analog and one digital) controlled by the DSP.
- Adjustable digital IF filter.
- 99 memories and 2 scan edges.
- Digital notch filter.
- Digital twin PBT to shift and narrow the IF passband to eliminate interference.
- Noise reduction and noise blanker.
- Dual watch function allows simultaneous reception of two signals in the same band.
- High stability TCXO unit with ± 0.5 ppm frequency stability.
- Digital voice memory to record and replay incoming signals. 4-channel transmit memory and 20-channel receive memory.
- Multi-function meter.
- RF speech compressor.
- Triple band stacking register.
- Programmable band edge beep.
- Built-in memory keyer.
- Microphone equalizer and adjustable transmit bandwidth.
- Two TX / RX antenna connectors with automatic antenna selector.
- Built-in 3-step attenuator and two types of RX preamps.
- 50 CTCSS tone encoder and VOX.
- RIT and delta TX variable up to ± 9.999 kHz.

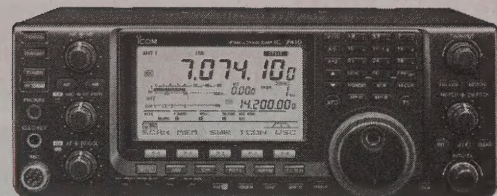
All-Band HF IC-718



- Receives 0.03 ~ 29.995 MHz.
- Transmits: HF amateur bands except 60m.
- Output power: SSB / CW / RTTY: 5 ~ 100 W variable, AM: 2 ~ 40 W variable.
- Modes: USB, LSB, CW, RTTY, AM.
- 101 memory channels.
- IF shift interference rejection.
- DSP built-in.
- Built-in electronic keyer.
- VOX operation, mike compressor, RF gain control.
- 10-key pad for direct operating frequency entering and memory channel selection.



IC-7410



The IC-7410 is an HF 50 MHz all mode transceiver.

- Faster DSP and AD / DA converter for higher dynamic range and S / N ratio.
- Double conversion superheterodyne.
- 30 dBm 3rd order intercept point.
- 3 first IF filters. FL-431 and FL-430 optional.
- Large, multi-functional LCD.
- USB connector for PC control.
- RTTY demodulator and decoder.
- Simple band scope.
- Wide range of DSP features.
- Ample CW functions.
- High frequency stability.
- Large heat sink.



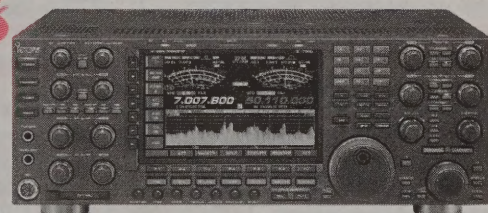
IC-7700 Contester's Rig

The IC-7700 features two 32-bit floating point units—one for the transmitter / receiver and the

other for the spectrum scope. There is a +40 dBm 3rd order intercept point and ultra wide dynamic range. Two IF stages and Icom's image rejection technology allow very weak signals and very strong signals to be heard without distortion.

- Automatic tracking pre-selector.
- 200 W output at full duty with high speed automatic antenna tuner.
- Professional 6m receiver.
- Ultra high frequency stability.
- Multi-function spectrum scope.
- RTTY / PSK31 operation without PC connection.
- Digital voice recorder.
- IF notch filter with adjustable characteristics.
- USB ports in front panel.
- RS-232C port for PC connection.
- General coverage receiver for 0.3 to 60 MHz.

IC-7800



The IC-7800 has 110 dB dynamic range and +40 dBm 3rd order intercept point in the HF bands. It features a general coverage receiver for 300 kHz to 60 MHz, transmits on amateur HF bands (except 60m) plus 6m with 5-200 watts out (5-50 W AM). There is a high speed antenna tuner, two types of receive preamps and 7-step attenuator, two completely independent receiver circuits, digital IF filter and manual notch filter.

- 50 CTCSS tone encoder / decoder.
- VOX capability.
- DSP controlled CW keying waveform shaping. Memory keyer.
- Mechanical relay band pass filter. Three roofing filters.
- Automatic tracking.
- Double conversion super-heterodyne system.
- AGC loop management using the DSP unit.
- AGC fine tuning.
- Real time spectrum scope.
- Four 32-bit floating point DSP units and 24-bit AD/DA converters.
- Ultra high stability OCXO.
- 50 MHz band preamplifier & mixer.
- Digital twin passband tuning.
- Variable level noise reduction.
- 7" wide color TFT LCD.
- RTTY / PSK31 operation without PC connection.
- Microphone equalizer. Adjustable transmit bandwidth.
- CF memory card for recording personal settings.
- Digital voice recorder.
- RF speech compressor.
- SSB data mode.
- 4 antenna connectors.
- Triple band stacking register.
- Variable noise blanker.

HF Plus VHF / UHF

IC-7200

HF Plus 6m

Shown with optional handles



The IC-7200 is a simple, tough rig for HF and 6 meters using the latest IF DSP technology. Distortion and blocking from strong nearby signals are prevented by placing DSP functions inside the AGC loop. The built-in digital filter eliminates the need for optional CW and SSB filters. Features digital twin PBT, manual notch filter, digital noise reduction, and digital noise blanker. The direct digital synthesizer (DDS) creates a clear, clean transmit signal. The IC-7200 has USB port for PC control, RF speech compressor, full break-in for CW, selectable CW carrier point, adjustable CW pitch, RIT, VOX, backlight LCD display, CI-V interface, 201 memory channels, preamplifier, band stacking register, built-in voice synthesizer and built-in 20 dB attenuator.

IC-7000

HF Plus VHF / UHF



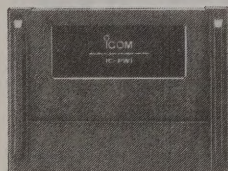
With its digital signal processing this mobile out performs some base stations. It has improved AGC loop performance, digital IF filters, 2 X manual notch filters, a digital voice recorder, flexible installation with a detachable panel, remote control microphone, a 2-mode band scope with simplified one-touch operation.

- Internal memory keyer.
- Control circuit for optional antenna tuners.
- Built-in voice synthesizer.
- CI-V control capability.
- 503 memory channels.
- 100-step digital noise blanker.
- Multi-function S/PWR/SWR meter.
- Receiver preamp and attenuator.
- 16-step digital noise reduction, RIT.
- CTCSS and DTCSS tone squelch.
- ± 0.5 ppm high frequency stability.
- Continuously adjustable RF output.
- Digital RF speech compressor.
- Bass and treble audio equalizer.
- Adjustable SSB transmit bandwidth.

HF + 6m Amplifier

IC-PW1

The IC-PW1 linear amplifier provides a wide frequency coverage with up to 1kW output requiring only a maximum of 100 watts input. The duty cycle is 100 percent with full break-in operation. It covers amateur bands from 160 meters to



15 meters plus 6 meters (10 m conversion information for licensed hams) and includes an automatic antenna tuner for all bands. Internal circuitry allows the ALC to be adjusted over a wide range allowing the PW1 to be used with almost any rig – not just Icom. Operates on 110 or 220 VAC 50 or 60 cycle. Single box shipping and the remote head is included.

Icom HF Specifications

Model	Receive Freq Range	Power Supply	Current Drain Xmit	AM	FM	SSB	CW	FSK	Mike Z ohms	Receive Circuitry	Sensitivity 1.8-30 MHz	RIT / XIT Range	Notch	Audio
IC-7000	300 kHz - 199.9999 MHz, 400 - 470 MHz	13.8 VDC	22A	1-40††	##	##	##	##		Triple Conversion	<18 μ v at 10 dB	± 9.9 kHz		>2.0 W
IC-7200	300 kHz - 60 MHz	13.8 VDC	22A	1-40		100 W	100 W	100 W		Triple Conversion	<16 μ v at 10 dB	± 9.9 kHz	Manual	>2.0 W
IC-7600	300 kHz - 60 MHz	13.8 VDC	23A	1-30	2-100	2-100	2-100	2-100	600	Double Conversion	<15 μ v at 10 dB	± 9.9 kHz	Automatic	>2.0 W
IC-7700	300 kHz - 60 MHz	85-265VAC		50†	200†	200†	200†	200†	600	Double Conversion	<16 μ v at 10 dB	± 9.9 kHz		>2.6 W
IC-7800	30 kHz - 60 MHz	85-265VAC		50†	200†	200†	200†	200†	600	Double Conversion	<16 μ v at 10 dB	± 9.9 kHz		>2.6 W
IC-7410	30 kHz - 60 MHz	13.8 VDC	23A	2-27	100	100	100		600	Double Conversion	<16 μ v at 10 dB	± 9.9 kHz		>2.0 W

† Output is continuously adjustable from 5 to full power * 50 watts on 2 meters, 20W 70cm ## 2-100W HF/50MHz, 2-50W VHF, 2-35W UHF

Digital Transceivers

VHF / UHF Satellite Plus HF / 6m Plus D-Star DV Mode



IC-9100

With built-in satellite mode operation, the IC-9100 covers HF / 50 MHz, 144 / 430

(440) MHz, and 1200 MHz frequencies. The optional UX-9100 is required for 1200 MHz. The rig has 100 watts output on HF / 50 / 144 MHz; 75 watts on 430 (440) MHz; 10 watts on 1200 MHz.

- Double superheterodyne receiver with image rejection mixer.
- SSB, CW, RTTY, AM, and (with the optional D-Star unit) DV mode.
- 32-bit floating point DSP and 24 bit AD / DA converter.
- Optional 3 kHz (FL-431) and 6 kHz (FL-430) 1st IF (roofing) filters.

ID-880H

D-STAR just keeps getting better and better and so does Icom's entry-level D-STAR dual band mobile, the ID-880H.

An improved user interface, smart new look and free programming software are included. Comes with a magnet mount from panel like the IC-2820H. There's lots of signaling options too.



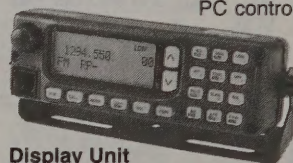
- Transmit 2 m / 440 MHz.
- Receive 118 - 999.99 MHz (cellular blocked).
- TX Modes FM / DV.
- RX Modes AM / FM / DV.
- 800 Memory channels
- Output power 50w on UHF and VHF.
- DTMF codes.
- 10 memory banks.
- Free programming software.
- V/U or U/V switchable operation.

IC-ID-1

While the ID-1 transceiver is a vital part of a D-Star system, you won't have to wait for a new repeater to be set up in your area. This rugged little rig operates with current analog 1.2 GHz repeaters, plus simplex digital operation with another ID-1. Its operating frequency range is 1240-1300 MHz with FM and GMSK (Digital) modulation formats. The ID-1 includes alphanumeric memory channels, CTCSS encode/decode and scanning, PLUS full



PC control via the USB port (a black box 1.2 GHz radio!). Now for the fun part... the ID-1 supports a 10 BASE-T ethernet cable for the 128K Data operation! Explore the benefits of wireless high-speed integrated digital connections!



Display Unit

Dual Band Mobiles

Ready for the Road with D-Star and GPS

IC-2820H

This D-STAR-compatible mobile transceiver provides 50 W on both VHF and UHF. Die-cast aluminum chassis keeps the powerful MOS-FET power amplifiers running cool. The optional UT-123 provides an on-board GPS module for D-PRS operation and realtime location data on the 2820's display. V/V U/U simultaneous receive, diversity receive capability with 2 antennas, 522 memory channels, built-in wide band receiver. Controller can be separated from main unit.

- Wideband receive covers 118-549.995 and 810-999.990 MHz (cellular blocked).
- Easy to read graphical interface display. Tuning buttons and display buttons are side-by-side for easy operation.
- Band scope functions let you watch conditions near the receiving frequency.
- 104x2 DTCS/50 CTCSS tone squelch operation.
- DTMF pager and code squelch.
- Automatic attenuator.
- Max 45 channels / sec high speed scan in programmed scanning mode.
- 9600 bps packet terminal, mini DIN (6 pin) connector.
- FM narrow capability.
- 16 DTMF memory channels.
- DTMF pager and code squelch function.
- GPS features (with optional UT-123) include, location information exchange, GPS alarm, GPS location tracking.
- Low speed data communication when connected to a PC with optional OPC-1529R.

IC-208H

The IC-208H features 55 watts out on 2 m and

50 watts on 70 cm. The output is switchable in three steps from 5 watts to 15 watts to the maximum power for each band.

- Wide-band receiver - 118 to 999.990 MHz (cellular blocked).
- 500 memory channels separable into 10 banks.
- Controller separation capability with included cable.
- 6-character alphanumeric LCD display. Name memory channels for easy recognition.
- Weather alert function.
- Select LCD backlighting color: amber or green.
- Clearly labeled function keys.
- Dynamic memory scan.
- Multiple scanning modes.
- Switchable wide/narrow channel spacing.
- Standard accessories include HM-133 hand microphone, OPC-600 separation cable, DC power cable and mounting bracket.

Icom VHF Specifications

Model	Freq Range	Mode	Power Supply	Current Drain Xmit	Current Drain Rec	Power Out Watts	Ant Z ohms	Mike Z ohms	Sens	Audio Power	Built-in AC Supply
IC-208H	2m / 440 MHz%	FM	13.8 VDC	12 A	1.0 A	55 / 50	50	600	<.18 μ V	3 W	no
IC-2200H	2m	FM	13.8 VDC	16 A	1.0 A	65	50	600	<.18 μ V	2.4 W	no
IC-V8000	2m	FM	13.8 VDC	15 A	1.0 A	75	50	600	<.15 μ V	>2.0 W	no
IC-2820H	2m / 440 MHz%	FM	13.8 VDC	13A	1.8A	50 / 50	50	600	<.18 μ V	>2.4 W	no
ID-880H	2m / 440 MHz%	FM	13.8 VDC	11.5 A	1.2 A	50 / 50	50	600	<.16 μ V	>2.4 W	no

† Extended receiver coverage 118-174 MHz (airband included), 440-450 MHz %extended receiver range. See text with radio.

2m Mobiles

IC-V8000

75 watts of power for your ultimate 2m mobile experience.

The IC-V8000 combines a one piece, die-cast aluminum chassis with 75W of transmit power to give you the most powerful 2m mobile transceiver in its class.

- Remotely control rig with HM-133 mike.
- Easy operation with a quick reference of user-defined memory channel information.
- 6 character alphanumeric display.
- CTCSS & DTCS are standard.
- DTMF encoder is standard with 10 channels with up to 24 digit DTMF codes.
- Front firing speaker.
- Optional UT-108 DTMF decode.
- Dynamic Memory Scan has 200 alphanumeric memories. DMS system allows customized scanning in 10 banks.
- FM narrow mode switchable.
- Clone from a PC or between radios.
- Weather Alert Scan (US only).

IC-2200H

Here are enhanced digital features plus a stable 65W output through a MOS-FET amplifier. A one-piece aluminum chassis keeps the transceiver cool even at high duty cycles.

- Retains simple operation with a large tuning dial. Secondary functions are recalled by holding the appropriate button.
- A total of 207 alphanumeric memory channels.
- Dynamic memory scan allows scanning of selected memory banks.
- 50 CTCSS and 104x2 DTCS encode/decode.
- 24 DTMF autodial memories.
- Selectable green or amber display.
- "Pocket Beep" signals an incoming call.
- Optional Digital Unit (UT-115). When connected to an external GPS, position information can be exchanged.
- DTMF code squelch/pager with optional UT-108.
- Weather channel.
- Selectable squelch delay.
- Built-in 10dB squelch attenuator.

HF Automatic Antenna Tuner

AH-4



The AH-4 auto-tuner covers all amateur bands from 80 to 6 meters when used with a minimum 23' long wire antenna. With the optional AH-2b antenna element, tune 40 through 6 meters for mobile operation. It has automatic band changes and tunes usually in less than 2.5 seconds. The 45 memories store SWR minimum and tuning combinations. Requires only 300 mW to tune and handles up to 120 watts. **HRO Price \$299.95**

Dual Band

IC-T70A

The IC-T70A offers impressive audio output volume, long-lasting power, plenty of memory channels, rugged construction, and many analog features:

- TX: 2 m / 440 bands.
- RX: 136-174, 400-479 MHz (US version).
- Power out selectable – 5 W / 2.5 W / 0.5 W.
- 700 mW loud audio.
- Long lasting battery life. Up to 10 hours with BP-264 and 13.5 hours with optional BP-265.
- External DC power jack.
- 392 alphanumeric memory channels including 50 band edges and 2 call channels. Maximum of 26 memory banks for scanning.
- Built-in CTCSS / DTCS..
- Internal VOX, WX channel, direct keypad frequency entry, 16 DTMF autodial memories.
- IP54 / MIL-STD-810 rugged construction.



IC-T70A Accessories

Model	Description	HRO Price
Cloning		
CS-T70	Cloning software	\$50.95
OPC-474	Radio to radio cloning cable	\$19.95
OPC-478UC	PC to radio programming cable, USB	\$66.95
Headphone / Microphone Accessories		
HS-94	Ear-hook headset w/flexible boom microphone	\$24.95
HS-95	Behind-the-head headset w/flexible boom microphone	\$149.95
HS-97	Throat microphone	\$40.95
HM-131	Spkr Mic w/earphone jack & clip	\$42.95
HM-153	Durable earphone microphone	\$109.95
SP-27	Acoustic tube earphone	\$35.95
Other Accessories		
AD-92SMA	BNC antenna adapter	\$20.95
OPC-2006	Cable to use with HS-94, -95, or-97	\$25.95
OPC-254L	DC Power Cable	\$20.95
OPC-515L	DC Power Cable (BC191, BC192, BC193)	\$23.95
CP-12L	Cigarette lighter cable w/ noise filter	\$40.95
FA-S270C	Antenna (same as supplied)	\$32.95
MB-124	Alligator Belt Clip	\$11.95

Dual Band IC-80AD

Shown with optional speaker/microphone

Looking for an affordable way to climb aboard the D-STAR digital express? This 2 m / 70 cm is Icom's entry level hand held dual band D-STAR transceiver, yet it delivers great features and robust analog performance.

- TX: 2 m / 440 bands.
- RX: 0.495-999.99 MHz (cell blocked).
- Power out selectable – 5 W / 2.5 W / 0.5 W / 0.1 W.
- Mode TX- FM / DV.
- Mode RX - AM / FM / WFM.
- Li-ion, 7.4V, 1300 mAh.
- Backlit alphanumeric LCD display.
- Backlit keypad.
- 20 character short text messaging with on-screen display.
 - GPS position reporting.
 - Free download cloning software.
 - Optional GPS speaker/microphone.



Single Band

IC-V82

2 Meter

IC-U82 UHF



D-STAR Digital with optional UT-118

The IC-V82 has 7 watts out and the IC-U82 has 5 watts.

- FM (analog) GMSK (digital).
- V82: TX 133-148 MHz; RX 136-174 MHz.
- PC programmable.
- Optional DTMF decoder UT-108 offers ANI and pager functions.
- Optional voice scrambler unit, UT-109 or UT-110.
- 10 memory banks and band link scan.
- 200 alphanumeric memory channels, 1 call channel, 6 scan edges.
- 20 character short text messaging.
- Built-in CTCSS /DTCS encoder/decoder.
- 16 DTMF autodial memories.
- 5 character alphanumeric display.
- Optional Digital Unit UT-114.

D-STAR Digital

IC-92AD

2 Meter / 440 MHz



- Submersible to a depth of one meter for 30 minutes.
- Wideband receiver has dualwatch capability.
- 5 watts output.
- Simple bandscope.
- Built-in voice recorder.
- Large dot-matrix display; one touch reply button; keypad navigation.
- Optional PC remote control capability.
- 1304 memory channels.

- Built-in CTCSS / DTCS tone encoder.
- Optional GPS speaker-microphone (HM-175GPS).
- 26 memory banks with selected bank and band link scanning.
- 10 channel DTMF memory (16 digit).
- Weather channel with weather alert (US and Canada versions only).

2 Meter / 440 MHz

IC-91A

One Radio. Two Bands.
Three times the fun!



Optional Digital mode includes:

- DV mode operation with an AMBEC codec. 950 bps data can be sent simultaneously with the digital voice transmission. Optional UT-121 required for the IC-91A.
- One touch reply button.
- Built-in voice recorder and auto reply button.

- Optional PC remote control capability with optional RS-91 software.
- Position information exchange when connected to an external GPS receiver (receive only when no external GPS is attached).
- DX communication over D-STAR.

- Wide band receiver with dualwatch capability. VFO A Range: 0.495-999.990 MHz (cellular blocked); VFO B: 118-174, 350-470 MHz.
- Large dot matrix display.
- 5 watts (typical) output.
- Keypad navigation to give quick access to the many functions.
- 10-channel 16-digit DTMF memory.
- 10 dB built-in attenuator.
- Total of 1304 memory channels.
- Built-in CTCSS /DTCS encoder / decoder.

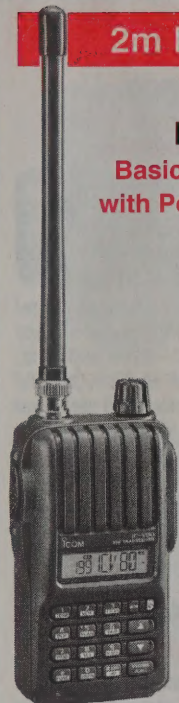
- Spectrum bandscope.
- External DC power jack. With the optional OPC-254L you can operate and charge at the same time.
- Squelch release function to monitor weak signals.
- Water resistant construction.
- Auto power save, power off / on.
- 26 memory banks with selected bank and band link scanning.
- Automatic repeater function - USA models.
- Weather channel with weather alert on USA models.

HANDHELDS & ACCESSORIES

2m Handheld

IC-V80

**Basic Rugged 2m
with Powerful Audio**



Features include:

- IP54 / MIL STD-810 rugged construction.
- 5.5 watts out. Up to 19 hours operation with optional BP-265.
- 207 memory channels.
- Built-in CTCSS / DCS.
- Internal VOX function.
- WX channel.

Handheld Batteries & Chargers

Model	Volts	Rating mAh	Wall Charger	Desk Charger
BP-173	9.6	600	BC-74A	BC-119*
BP-180	7.2	600		BC-119*
BP-194	**			
BP-204	**			
BP-206	3.6	1650	BC-136A	BC-135
BP-208N	**			
BP-209N	7.2	1100	BC-137	BC-119N
BP-210N	7.2	1650	BC-137	BC-119N
BP-217	7.4	1500	BC-167	BC-139
BP-222	7.2	600	BC-137	BC-119N
BP-227	7.2	1700	BC-145	BC-119N
BP-264	7.2	1400	BC-192#	BC-191!
BP-265	7.4	1900		BC-193!

* Note: The new BC-119N-01 has to have either the AD-75 or AD-88 as well as adapters (see page 12).

** "AA" Alkaline Pack.

Requires BC-147S AC adapter.

! Requires BC-123S AC adapter.

Icom Handheld Accessories

		2 METERS							DUAL- and TRI-BAND							440 MHz / GMRS
Accessory		T2A T2H	T22	V8	V80	V82	V85	P7A	W31A W32A T7A/H	T70 A	80AD	T8A T81A	T90A	91 A/D	92 AD	U82
Packs	BP-200L											*				
	BP-202															
	BP-208N					*										*
	BP-209N			*		*										*
	BP-210N			*		*										*
	BP-216										*	*	*	*	*	
	BP-217										*	*	*	*	*	
	BP-222			*												
	BP-227						*									
	BP-256														*	
Battery Cases	BP-257														*	
	BP-263				*					*			*			
	BP-264				*					*			*			
	BP-265				*					*			*			
	BP-170		*						*							
	BP-208			*												
	BP-226						*									
Carrying Cases	LC-161							*								
	LC-163										*				*	
	LC-168														*	
	LC-174									*			*			
Cables	CP-12L									*	*		*	*	*	
	CP-19R					*	*			*	*	*	*	*	*	
	OPC-254	*							*		*			*		
	OPC-254L									*			*		*	
	OPC-288													*		
	OPC-474				*					*			*			
	OPC-478									*						
	OPC-515L				*					*		*				
	OPC-782							*								
	OPC-2004				*					*						
	OPC-2006										*		*	*	*	
	OPC-1529R										*		*	*	*	
Speaker Mikes	HM-46	*							*				*			
	HM-46L			*												
	HM-54	*							*			*				
	HM-75	*	*	*	*	*	*	*	*		*	*	*	*	*	*
	HM-75A					*	*	*		*	*		*	*	*	*
	HM-128				*	*	*	*		*	*		*	*	*	*
	HM-131								*	*	*		*	*	*	*
	HM-131L		*	*	*	*	*	*		*	*		*	*	*	*
	HM-153				*	*	*	*		*	*		*	*	*	*
	HM-153L				*	*	*	*		*	*		*	*	*	*
	HM-153P							*	*	*	*		*	*	*	*
	HM-158L			*	*	*	*	*		*	*		*	*	*	*
	HM-159L			*	*	*	*	*		*	*		*	*	*	*
	HM-166									*	*		*	*	*	*
	HM-174														*	*
	HM-175GPS														*	*
Headsets	HS-51	*	*	*					*			*		*		
	HS-85					*	*	*	*		*	*	*	*	*	
	HS-94		*	*	*	*	*	*	*		*	*	*	*	*	
	HS-95		*	*	*	*	*	*	*		*	*	*	*	*	
	HS-97		*	*	*	*	*	*	*		*	*	*	*	*	
	VS-1L		*	*	*	*	*	*	*	*	*	*	*	*	*	
Internal Options	UT-108				*	*	*	*	*	*	*	*	*	*	*	
	UT-109/110				*	*	*	*	*	*	*	*	*	*	*	
	UT-114/118				*	*	*	*	*	*	*	*	*	*	*	
	UT-121				*	*	*	*	*	*	*	*	*	*	*	

Icom Handhelds

Model	Frequency	Power Supply	Power Out Transmit*	Current Transmit	Drain Receive	Sensitivity at 12 dB	Height in(cm)	Width in(cm)	Depth in(cm)	Weight oz(g)	HRO Price
IC-T70A	2m/440	7.2 VDC	5.0/2.5/0.5 W	2.1 A	<450 mA	<18μV	4.8(11.1)	2.3(5.8)	1.2(3.0)	13.4(380)	CALL
IC-V80	2m	7.2 VDC	5.5/2.0/0.5 W	1.4 A	310 mA	<14μV	4.4(11.2)	2.3(5.8)	1.2(3.0)	12.7(360)	CALL
IC-V82	2m	7.2 VDC	7.0/4.0/0.5 W	2.6 A	250 mA	<16μV	5.4(13.9)	2.1(5.4)	1.4(3.5)	13.8(390)	CALL
IC-U82	440	7.2 VDC	5.0/2.0/0.5 W	2.0 A	250 mA	<16μV	5.4(13.9)	2.1(5.4)	1.4(3.5)	13.8(390)	CALL
IC-80AD	2m/440 †#%	7.2 VDC	5.0/2.5/5.1 W	1.8 A	215 Ma	<14μV	4.1(10.3)	2.3(4.1)	1.3(3.4)	10.3(290)	CALL
IC-91A	2m/440 †#%	7.2 VDC	5.0 W	2.2 A	170 mA	<16μV	2.1(10.3)	2.3(5.8)	1.4(3.4)	10.6(300)	CALL
IC-92AD	2m/440 !	7.4 VDC	5.0 W	2.1 A	<220 mA	<16μV	4.4(11.2)	2.3(5.9)	1.4(3.4)	11.5(325)	CALL

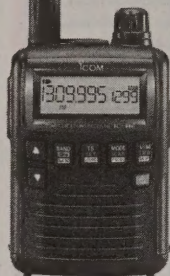
* Power with standard battery pack. † Frequency coverage 138-174 (receive only outside amateur bands), 440-450 MHz.

Extended receive 118-174 MHz and 400-470 MHz. % 0.495-999.99 cellular blocked.

IC-R6

The IC-R6 is a Signal Search Machine. Covering 100 kHz to 1309.995 MHz (cellular blocked and receives analog TV only), it can search 100 channels per second.

The receiver is energy-efficient, designed to provide up to 15 hours of listening on a single charge.



With 1300 memory alphanumeric memory channels, 50 scan edges, and 200 auto-write memories, there are many scanning opportunities. The bank link feature allows connecting any of the 22 memory banks. The Voice Squelch Control opens the squelch only when a modulated signal is detected.

IC-R6 Accessories

Model	Description	HRO Price
Cloning		
CS-R6	Cloning Software	\$55.95
OPC-478	Cloning Cable (RS-232C)	\$45.95
OPC-474	Radio to Radio Cloning Cable	\$19.95
OPC-478UC	PC to Radio Programming Cable, USB	\$66.95
Headphone Accessories		
HP-4	Lightweight headphone	\$34.95
SP-13	Earphone	\$5.95
SP-27	Tube Earphone	\$35.95
Other Accessories		
AD-92SMA	BNC antenna adapter	\$20.95
BC-196SA	AC Adapter (same as supplied)	\$49.95
BC-194	Charger Stand	\$39.95
CP-18A	Cigarette Lighter Cable	\$33.95
LC-146A	Carrying Case	\$29.95
FA-S270C	Antenna (same as supplied)	\$32.95
CT-17	CI-V Level Converter	\$139.95



IC-R75



This receiver covers the HF bands plus 6 meters (0.03 to 60 MHz). It features twin PBT, built-in DSP capability, and a front mounted speaker. Modes include USB/LSB, CW, RTTY, AM/S-AM and FM. A complete line of filters are available. Operates at 13.8 VDC \pm 15% at 2.0A. Features 101 memories (99 regular and 2 scan edges). Program scan, memory scan and priority scan. Direct frequency input with numeric keypad. Two-level pre-amp, noise blanker and selectable AGC.

IC-R20

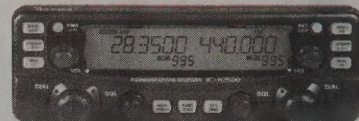


The IC-R20 retains many of the features of the R10 including voice scan control, attenuator, RF gain control, noise blanker, automatic noise limiter, multiple scan functions, CI-V PC control, backlit keypad. New features include wide range receive 0.15 to 3304.9999 MHz (822-851 and 867-896 MHz blocked), SSB/CW/AM/FM/WFM, dual watch between bands, IC audio recorder, auto squelch, 1250 memory channels, CTCSS / DTCS / DTMF decode, internal bar antenna for MF reception.

PC-Controlled

IC-R2500

Dualwatch Digital Mode Diversity Receiver



A great receiver for mobile operations!

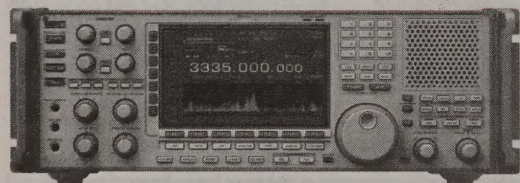
- Dual watch (2 antennas required) receive covering 0.01-3299.999 MHz.
- Receives AM, FM, WFM, SSB, CW, DV (optional UT-118), and P25 (optional UT-122) on main receiver. Covers 50-130MHz in AM, FM and WFM on sub-receiver.
- Diversity receive capability selects the antenna with best signal (2 antennas required).
- 1000 alphanumeric memories.

IC-R1500

Mobile

Wideband mobile receiver with remote control head (cable supplied) covers 0.01 - 3299.999 MHz (cellular blocked).

- 60 channel /second scan.
- Optional DSP with UT-106.
- 1000 alphanumeric memories in 21 banks.
- CTCSS / DTCS tone and pocket beep.
- VSC (voice squelch control).
- IF filter, IF shift (CW, SSB).
- Noise blanker (SSB, CW, AM).
- RF attenuator.
- Weather alert (US only).
- All functions are available when connected to a PC. Cloning to read / write memory channels from the PC.



IC-R9500

Professional Communications Receiver

- +40 dBm IP3 / 110 dB wide dynamic range.
- Measuring class accuracy. Dual IF filter.
- Superior BPF unit.
- Dual DSP. 10 VFOs.
- 7" wide color TFT LCD.
- High resolution spectrum scope. 1000 memories.
- 2 channel noise blanker.
- 5 roofing filters. 2 point manual notch filter.
- 0.005-3335 MHz. Cellular blocked.
- All bands: SSB, CW, FSK, AM, FM, WFM on some.
- Digital voice recorder.
- 4 antenna connectors

Software

RS-BA1



IP Remote Control for HF Transceivers

Remotely control Icom transceivers through an IP network with the RS-BA1. The RS-BA1 allows you to use the radio installed in another room using your home network or a remote location over the Internet. The low voice latency caused by the RS-BA1 provides the same operational experience as using an actual radio. Most functions and modes of your transceiver can be controlled.

The RS-BA1 has two component applications: System Configuration to set up the IP address and ther settings and Remote Control allows you to control the radio. The display on the RS-BA1 is similar to the radio's front panel. Supports the IC-7200, 7410, 7600, or 9100 with USB connection to a PC. Also the IC7800 or 7700 connected to a PC with an RS-232C cable plus S/P DIF or ACC cable.

Icom Cloning

Icom cloning software for Windows allows you to preprogram memory channels with operating frequencies, set tones, set power levels, set squelch levels, set up auto-dial DTMF frequencies, and exchange operating frequencies. Call for price quotes.

- **RS-746** - remote software for IC-746.
- **CS-R3** without cable (R3).
- **CS-R5** without cable* (R5).
- **CS-2720H** without cable* (2720H).
- **CS-V8000** without cable (V8000).
- **CS-V8A** without cable (V8A).
- **CS-2800** without cable (2800).
- **CS-T90A** without cable (T90A).
- **RS-91** for IC-91A series.
- **CS-2820** for IC-2820H.
- **CS-D800** for IC-ID800.
- **RS-92** for IC-92AD.

* OPC-478U USB cable for IC-2720H and IC-R5.

KENWOOD

Peerless Performance



TS-590S

HF / 50 MHz All Mode Transceiver

\$CALL - HRO Price

The TS-590S marks a bold new chapter in Kenwood's proud history of high-performance compact HF transceivers. Featuring a narrow-band roofing filter, it significantly reduces interference from unwanted signals, resulting in excellent RX performance and revealing signals that would be hidden to lesser rigs. With IF AGC based on advanced DSP technology, Kenwood has essentially redefined HF performance.

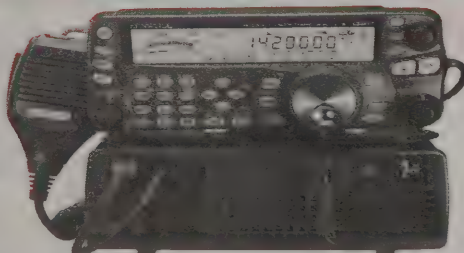
- A sharp 500 Hz / 2.7 kHz roofing filter and dedicated first mixer, this new transceiver offers the best dynamic range in its class to handle adjacent unwanted signals.
- Transmitter features: 100 Watt heavy-duty design, built-in automatic antenna tuner, optional TCXO, drive output (including 135 kHz band), speech processor (SSB / AM / FM), adjustable TX filter (SSB / AM, TX equalizer (SSB / AM / FM), TX monitor; VOX, adjustable TX power output and CAR level.

- In addition to basic functions such as AGC, digital IF filters, detection and demodulation, a wide range of features including noise reduction and IF notch are all implemented with the latest algorithms. IF auto notch and IF AGC. AF digital signal processing, two types of Noise reduction and TX audio shaping.
- CW support includes CW auto tune; 2 key terminals, full and semi-break-in, memory keyer, electronic keyer.
- Large display with 2-color LED backlight.
- Direct frequency entry, USB connectivity for PC control, remote control using a computer optional voice guide and storage unit.
- Programmable keys, 110 memory channels, memory scroll function, multiple scan functions.
- FSK RX equalizer, ATT, pre-amp, adjustable RF gain, selectable SQL level, FM wide / narrow, CTCSS, cross-tone.

HF Mobile

**TS-480HX
TS-480SAT**

Compact, Portable HF Transceiver



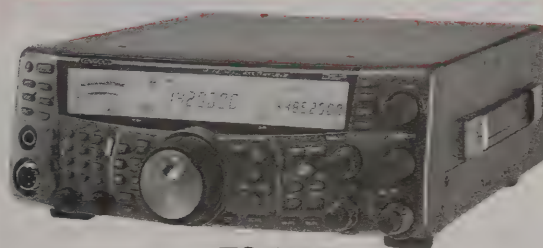
With its separate control panel, the TS-480 is perfect for base station use, while ample receive audio makes it outstanding for mobile applications. Using 13.8V for power, the TS-480HX delivers 200W; the TS-480SAT delivers 100W. The TS-480SAT also has an automatic antenna tuner.

- 500 kHz-60 MHz general coverage receiver.
- Separate LCD control panel with speaker. It can be positioned up to 4 meters from the main unit.
- PC-based control.
- TX / RX AF DSP. 16-bit AF digital signal processing offers noise reduction, TX / RX equalizer and AF filters.

- Optional IF filters available.
- TX covers all amateur bands 1.8 MHz to 60 MHz. Includes 5 MHz band for the US market.
- Quad-mixer provides RX dynamic range in the TS-950 class.
- PSK-31 compatibility.
- Packet cluster tune with optional TM-D700E/A.
- Additional front panel available.

HF RIGS

All-Mode / All-Band



TS-2000

\$CALL - HRO Price

The TS-2000 is a marvel of electronic engineering. Kenwood's stylish all-mode multibander is packed with top-end features yet compact enough to use at home, in your car, or on a DX'pedition.

The TS-B2000 is a "Black Box" version for computer control or vehicle use with the optional RC-2000 mobile controller. ARCP-2000 radio control software is supplied with the TS-B2000.

- All mode multibander: HF/50/144/440/1200 MHz (optional UT-20 required for 1200 MHz operation on the TS-2000).
- 500 kHz to 1300 MHz wide band receiver with dual-channel receive. Has satellite mode plus a sub 144/440 MHz FM/AM receiver so two frequencies can be received simultaneously.
- Built-in TCXO with professional performance ± 0.5 ppm (-10 to 50 degrees C).
- Optional mobile controller and optional control software.

- The transmitter provides 100 watts on HF / 50 / 144 MHz bands (AM 25 watts). There is 50 (AM 12.5) watts on 440 MHz. For 1200 MHz operation, the unit delivers 10 (2.5 AM) watts.
- Digital signal processing combines IF-DSP with AF-DSP (sub band).
- The IF digital signal processing provides for DSP detection, digital filtering, IF auto notch and IF AGC. The AF digital signal processing, two types of Noise reduction and TX audio shaping.
- High speed processing using two 16-bit DSP chips, double precision computing and a 100 MHz CPU and 24-bit A/D and D/A converters.
- Satellite communications uses main-band circuits.
- The Kenwood Sky command System II Plus is built-in.
- Built-in auto antenna tuner, DX cluster tune and an antenna terminal dedicated to HF low-band operation.
- The TNC is compliant with the AX.25 protocol.

* Not 60m

TS-B2000

\$CALL
HRO Price



**Most orders greater than
\$100 receive free UPS Brown
shipping in continental US.**

KENWOOD

TM-281A 2 Meters plus Weather

\$CALL

HRO Discount
Price



On or off road, the TM-281A delivers powerful mobile performance with 65 W maximum output. The weather alert radio function checks the 1050 Hz tone from NOAA (US only). The radio features 200 memories (100 if memory channel names are assigned to the channels), menu for easy control and function selection, CTCSS or DCS to reject unwanted calls, easy to read large LCD alphanumeric display, FM and narrow band FM ready, and free PC memory control software is available.

TM-V71A 2 m / 70 cm



Kenwood's TM-V71A FM dual bander is locked and loaded for action. It is equipped to shine in any mobile communications role. It features 50 W output, 1000 memory channels, multiple scan options and PC connectivity.

- High power output - 50W on VHF/UHF.
- Same band dual receive (VxU, UxU).
- Compatible with ARRL TravelPlus.
- "Five-in-One" programmable memory storing five different operating profiles.
- 1000 split memory channels plus an additional 10 for programmable scan.
- PC programmable w/PG-5G (optional).
- Built-in CTCSS encoder/Invertible front panel.
- 104-code digital code squelch.
- Choice of backlight (amber / green).
- Voice guidance and storage option with optional VGS-1.
- Weather alert/RX (US only)
- EchoLink® Sysop mode for node terminal operation.
- EchoLink® memory auto-dialer.
- Wide band receive (118-524MHz and 800-1330 MHz cellular blocked)
- MC-59 16-key hand microphone with backlighting.
- Selectable repeater offset.
- Auto repeater offset (VHF only)

Kenwood HF Specifications

Model	Receiver Frequency Range	Power Supply		Current Drain		Power								Sensitivity	RIT / XIT	Notch Filter	Audio
		50/60 Hz AC	DC	Xmit	Rec	AM	FM	SSB	CW	FSK	FSK Shift	Mike Z ohms	Receive Circuitry				
TS-2000*	0.5-30 MHz, 50-54 MHz, 144-138 MHz, 430-450 MHz, 1240-1300 MHz		13.8 V	20.5 A	2.0 A	100	100	100	100	100	100	600	Quadruple Conversion	<11µV SSB,CW,FSK (varies with band and mode)	±20 kHz	> 30 dB	1.5 W
TS-590S	0.13 MHz - 60 MHz		13.8 V	20.5 A	1.5 A	25	100	100	100	100		600	#	< .2 µV	±9.99 kHz	> 70 dB	1.5 W
TS-480SAT†	500 kHz - 60 MHz		13.8 V	20.5 A	1.5 A	25	100	100	100	100		600	#	< .2 µV	±9.99 kHz	-	2 W
TS-480HX	500 kHz - 60 MHz		13.8 V	41.0 A	1.5 A	50	200	200	200	200		600	#	< .2 µV	±9.99 kHz		2 W

Double Conversion SSB, CW, AM; Triple FM (1)170,200,425,850 Hz *Output 440MHz 50 W and 1000 MHz 10 W †Output 6M 480HX - 100W/50W AM 480AT 50W/25 W AM

DUAL BAND MOBILES

TM-D710A 2 m / 70 cm

HRO
Discount Price
D710A \$CALL



Kenwood provides advanced APRS™ ham radio equipment with the TM-D710A mobile transceiver. It offers even more features and versatility than the TH-D7A handheld with built-in TNC and APRS™ software. The detachable control head comes with remote cable for easy installation. The radio incorporates a 9-pin PC connection for easy hook-up to program frequencies and other APRS™ mapping programs. Your TM-D710A is a full dual-band operation radio so VHF+VHF / VHF+UHF / UHF+UHF operation is possible. Full digipeater functions allow anyone to set up a digipeater location wherever needed to help fill in APRS™ nationwide network. Internet gateway operation is also possible for world-wide text communication over VHF.

- Output 50 W VHF/ UHF.
- Receives 118-1300 MHz (cellular blocked).
- 2 back light colors: amber / green.
- Alphanumeric dot-matrix LCD amber display.
- Easy-to-use menus.
- Internal clock for APRS time & date stamping.
- APRS filter and sort functions.
- APRS speed and altitude beaconing.
- Three different APRS grids.
- APRS QSY function, delay algorithm, voice alert and weather beaconing.
- EchoLink® ready with 10 dedicated memories.
- Dual receive and NOAA weather alert.
- 1000 memories.
- SkyCommand II.
- Sound card interface.
- VGS-1 voice guide and storage optional.
- NMEA 0183 GPS i/O port.
- Free MCP programming software.

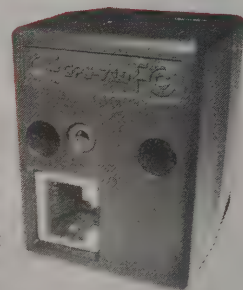
GPS Unit for Kenwood

Green Light Labs

GPS 710

Plug-and-Play GPS for the Kenwood 710 Series

The GPS-710 is a custom built, uncluttered, plug-and-play solution for adding a stand-alone GPS to your Kenwood TM-710A or RC-71D radio. It uses a top-notch 20 channel SiRF-III GPS chipset (with WAAS, ENGOS and MSAS augmentation) that can acquire GPS lock from a cold start in well under 60 seconds. The active internal antenna has proven itself in prototyping and beta testing to maintain GPS lock, even in very unfavorable placements. The GPS-710 pulls about 40mA of power from the line. The GPS-710 has not been approved by Kenwood but it should be well within the operational limits of the TX/RX base. **HRO Price \$129.95**



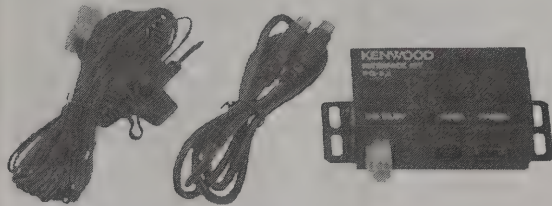
Mobile / TNC



RC-D710

TNC with APRS

The RC-D710 is a stand alone 1200 / 9600 bps TNC with APRS firmware. With the supplied accessories, the RC-D710 is a full upgrade to the TM-V71A. By exchanging the TM-V71A panel with the RC-D710, you will have the full functionality of the TM-D710A. Supplied accessories include: Open ended GPS cable, cable with modular plug for panel connection, two bases for control head (mobile and base), line filter, and instruction manual on CD-ROM.



PG-5J

Interface Kit

Functioning as an external modem, the PG-5J connection kit makes the RC-D710 a complete stand alone APRS/TNC for any of these Kenwood models: TM-D710A, TM-V71A, TM-D700A, TM-G707A, TM-V7A, TM-732A, TM-733A, TM-255A, TM-455A. Includes data and DC cables.

Kenwood VHF / UHF Specifications

Model	DC Power Supply	Current Drain		Output Power	Sensitivity	HRO Price
		Transmit	Receive			
TM-281A	13.8 V	13 A	1.2 A	65 W	<16 μ V	CALL
TM-V71A	13.8 V	13 A	1.2 A	50 W / 50 W	<16 μ V	CALL
TM-D710A	13.8 V	11.5 A	1.0 A	50 W / 50 W	<16 μ V	CALL

Handheld Battery Packs / Chargers

Battery	Voltage	Rating MAH	Desk Charger	Radio Series	HRO Price
PB-42L	7.4	2000	-	TH-F6A	\$88.95
PB-43N	7.2	1100	KSC-24	TH-K2AT	\$49.95

Kenwood Handheld Specifications

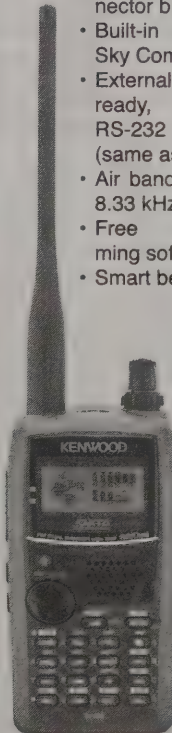
Model	Freq Range	Power Supply	Power Out	Current Transmit	Current Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Discount Price
TH-K2AT	144-148 MHz	6-16 VDC	5 W	1.8 A	30 mA	<13 μ V	4.4 (11.2)	2.3 (5.8)	1.5 (3.5)	11.3 (320)	CALL
TH-F6A	144/220/440MHz	5-7.5VDC	5 W	2.0 A	35 mA	<13 μ V	3.4 (8.7)	2.3 (5.8)	1.2 (3.0)	8.8 (250)	CALL
TH-D72A	144/440MHz	7.4VDC	5 W			<18 μ V	4.78 (12.1)	2.26 (5.8)	1.31 (3.3)	13.1 (370)	CALL

Dual Band

TH-D72A 2 m / 70 cm

**Enhanced GPS
& APRS capability**

- 2m / 440 MHz transmit with wide band receive.
- Dual receive, VxV, UxU, VxU, UxV.
- 5 Watts transmit.
- Built in GPS uses the SiRF Star III chipset (same as Garmin).
- GPS track logging function. Memory can be output to PC in KML format to be displayed on Google Maps.
- 1000 memory channels with 8 digit alpha name function.
- Built in 1200 / 9600 TNC AX.25 with KISS mode and digipeat functions.
 - Mini USB connector built-in.
 - Built-in Kenwood Sky Command II.
 - External GPS ready, built in RS-232 com port (same as D7).
 - Air band RX with 8.33 kHz step.
 - Free programming software.
 - Smart beaconing.



One Band

**HRO
Discount Prices
TH-K2AT
\$CALL**

TH-K2AT 2 m

This 2-meter handheld is conveniently PC programmable.

- Priority scan.
- Large LCD panel & backlit keys.
- 5W RF output.
- Weather alert/receive.
- Internal vox.
- Auto repeater offset.
- Multiple scan functions.
- Automatic simplex checker.
- Built-in CTCSS, DCS and 1750 HZ tone burst.
- Meets MIL-STD-810 standards for resistance to rain, vibration, shock and humidity.
- High-gain antenna.
- More receive audio than most other handhelds on the market.



Tri Band

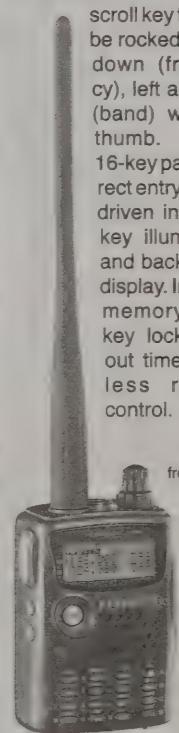
TH-F6A 2 m / 220 Mhz / 70 cm

\$CALL - HRO Price

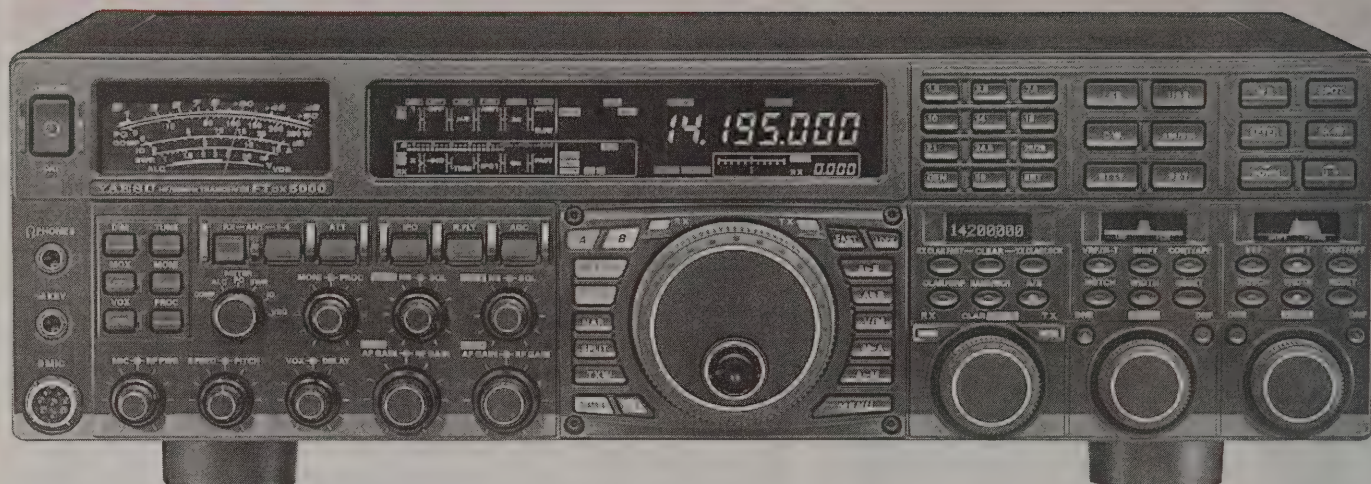
The TH-F6A has a dual personality: it's a 3-band transceiver and also a wide-band (0.1-1300 MHz*) receiver. In addition to FM / FMW / FMN / AM and SSB / CW, the receiver has a special weather channel mode.

It can receive 2 frequencies simultaneously, even on the same band. The rig features 435 memories including 3 call channels and another 20 for programmable scan. The HT comes equipped with a 7.4 volt 2000 mAh lithium-ion battery providing 5 watts output. Ease of operation is achieved with a multi-

scroll key that can be rocked up and down (frequency), left and right (band) with the thumb. Has a 16-key pad for direct entry, menu-driven interface, key illumination and backlit LCD display. Includes memory shift, key lock, time-out timer, wireless remote control.



*Cellular frequencies blocked



FTDX5000

Three models

SCALL for HRO Price

The FTDX 5000 Series HF / 50 MHz 200 Watt transceivers are a new premium class of Yaesu radios with 2 independent receivers plus many unique options and accessories designed to meet the performance requirements of even the most demanding serious amateur radio operator.

Choose from three models

FT dx 5000

SM-5000 station monitor – optional; 300 Hz roofing filter – optional; ± 0.5 ppm TCXO – included.

FT dx 5000D

SM-5000 station monitor – included; 300 Hz roofing filter – optional; ± 0.5 ppm TCXO – included.

FT dx 5000MP

SM-5000 station monitor – included; 300 Hz roofing filter – included; ± 0.05 ppm OCXO – included.

FTDX5000 Models & Major Feature Differences

Model	SM-5000	TCXO	300Hz Roofing Filter	HRO Price
FTdx5000	Optional	± 0.5 ppm	Optional	CALL
FTdx5000D	Included	± 0.5 ppm	Optional	CALL
FTdx5000MP	Included	± 0.05 ppm OCXO	Included	CALL

- The FTDX5000 robust and high-power final amplifier stage incorporates two super reliable FET, VRF-150 (drain-source voltage 170 V/gate source voltage ± 40 V, total device dissipation 300 W) in a push-pull configuration, offers solid 200 W output (75 W class A operation).
- All three FTDX 5000 series radios have their own built-in power supply (110/220 VAC).
- Two (2) totally independent receivers to give you performance and flexibility previously only provided by much more expensive radios.
- Supersharpest "roofing" filters for VFO-A / main receiver. Filters are selectable between *300 Hz, 600 Hz, 3 kHz (6-pole crystal filter), 6 kHz, 15 kHz (4-pole MCF).
- 32-bit floating point DSP based on the TI TMS320C6727B (@300 MHz), one EACH for VFO-A and VFO-B.
- Variable CW audio peak filter, and high / low-cut filtering created through the very latest in DSP technology. CW width: 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 Hz. CW pitch frequency: 300~1050 Hz (10 Hz steps).
- Three electro luminescence clear displays included for easier operation and control of the sub-frequency, graphical

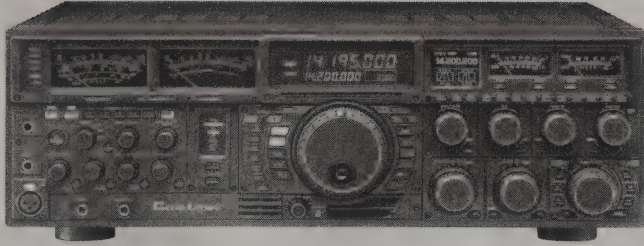
wave and menu function.

- True analog meter precision. Enjoy the same huge size metering system as the FTDX 9000 series with true analog precision and instant reaction time.
- IF output (9 MHz) from VFO-A / main receiver.
- SM-5000 matching station monitor. Included with the bandscope is a complete, enhanced stereo speaker system with superb audio quality.
- Provides loads of practical level indication that clearly show settings of mic-gain / RF power / CW-pitch / keyer speed / processor level / VOX delay time / break-in delay time.

Valuable Options

- Yaesu Data Management Unit DMU-2000. Utilize its powerful audio scope, oscilloscope, spectrum scope, logging, and rotator control capabilities using your own personally selected and purchased computer display monitor and keyboard.
- Yaesu External Fully-Automatic Micro-Tuning Units. Three modes available: A (160 m band), B (80 & 40 m bands), C (30 & 20 m bands)
- XF-126CN 300 Hz filter option for FTDX5000 or FTDX5000D.

HF TRANSCEIVERS



FT-DX9000 Contest Shown

FT-DX9000

Rebirth of the renowned FT DX series

\$CALL

The FT DX 9000 has the electronic DNA from the FT-1000D, but it has advanced far more than just one generation. The only HF / 50 MHz transceiver capable of cross-band full duplex operation (for one-box SO2R contest operating), the identical dual receivers feature unmatched real-world, close-in dynamic range, selectable (15 / 6 / 3 kHz) roofing filters, and superb filtering thanks to the 32-bit IF DSP. On transmit, the industry's only 3-band parametric microphone equalizer yields superb SSB audio, and the FT DX 9000D's TFT display provides a two-band spectrum scope, world clock with sunrise/sunset illumination, rotator control page for Yaesu G-800 / 1000 / 2800 DXA rotators, an audio scope / oscilloscope page with waterfall display, and much more. Three FT DX 9000 configurations are available.

- HF + 50 MHz.
- Four TX / RX antenna jacks; two RX in / out BNC jacks; one SO239 RX antenna jack.
- PS/2 & USB keyboard connectors.
- Data port for PC connection.
- Direct frequency entry.
- One-touch band change.
- Direct input/output sound card connections.
- One-touch "Narrow" DSP filter selection.
- Class-A with continuous A1AB bias control.
- Rotator interface jack for direction indication and control (TFT-equipped models).
- Order rig from HRO; add options for direct shipment from Yaesu / Vertex Standard headquarters after performance verification at factory.

**Most orders
greater than
\$100 receive
free UPS
Brown
shipping in
continental
US.**

Choose from three models

FT-DX 9000MP

400 Watts output; external switching power supply with twin speakers and audio filters; LCD display plus four analog meters; flash memory card to store configuration and log data; full dual receive (identical receivers) for SO2R; and main and sub receiver VRF preselectors.

FT-DX 9000D

200 Watts output; 6.5" TFT display plus two analog meters; flash memory card for configuration and logging data; very-high-Q "μ-Tune" narrow-band preselector modules for 160-20 m (main receiver) plus VRF for both receivers; full dual receive for SO2R; internal switching supply.

FT-DX 9000 Contest

200 Watts output; LCD display plus four analog meters; single receiver with VRF; internal switching supply; extra key and headphone jacks. Second RX, VRF/μ-Tune modules, and data management unit (to enable external monitor) are optional and may be added.



Call for
HRO
Price

FT-2000 HF / 50 MHz Transceiver

FT-2000D
200W
Version Also
Available

The FT-2000 is the 2nd Generation in the proud lineage of the FTdx-9000 Series! Featuring extensive DSP filtering, 100 watts of power output, and a host of outstanding ergonomic and performance features, the FT-2000 is destined to be the centerpiece of your HF / 50 MHz station.

- Provides a full 100 watts of power output (AM: 25 W) on the 160-6 m amateur bands. U.S. version includes a special memory bank containing the five 60-meter channels, continuous receiver coverage from 30 kHz to 60 MHz.
- Receiver front end includes VRF (variable RF tuning) preselector and optional m-tuning for low bands available.
- Variable SSB bandwidth capability. Default bandwidth is 2.4 kHz (300-2400 Hz @ -6 dB). Other selections are 50-3000 Hz, 100-2900 Hz, 200-2800 Hz, and 400-2600 Hz.
- First IF roofing filters included.
- Strong receiver design provides wide dynamic range and high intercept point.
- Dual receive in same band.
- Wide array of IF-DSP interference rejection filters.
- External display port for viewing of

RF scope, audio scope, and X-Y oscilloscope displays. (Requires data management unit and external display.)

- Five-group, 99 channel memory with 5 channel quick memory bank.
- A host of CW features.
- Unique receiver configuration display.
- Variable IF Width and IF Shift allow precise interference rejection, and the receiver DSP also includes an Auto-Notch, Manual Notch, Digital Noise Reduction, and a continuously-variable passband Contour control. WIDTH control has a mode-determined adjustment range of 200 Hz - 4 kHz for SSB, and 25 Hz to 2.4 kHz on CW, and a mode-optimized "Narrow" key provides one-touch narrowing of the bandwidth to a user-determined preset value.

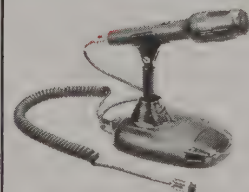
Microphones



MD-200 A8X \$CALL HRO Price

Desk microphone designed for base station use with Yaesu's newest generation of transceivers. Features a studio-quality polyethylene terephthalate film dynamic element

Provision for incorporating user supplied mike element with a switch to select between the standard and user element.



MD-100 A8X

\$CALL
HRO
Price

This desk microphone features selectable low-cut filtering and high-emphasis active filtering that allow you to tailor the microphone response for optimum voice clarity or DX punch. It has a large push-to-talk switch and latching button, along with a large rotary up/down, slow/fast control for scanning.

Base Station All-Mode



All Mode FT-950

\$CALL
HRO Discount Price

HF + 6m

The FT-950 has been designed especially for the DX enthusiasts and features superb receive performance. There is the optional Yaesu exclusive fully automatic tuning preselector system with the same capability available on the FT-DX9000 / FT-2000. It is connected externally with no internal modifications required. When engaged, the VRF system is bypassed but the fixed bandpass filters are still in the received signal path. The optional External Data Management Unit (DMU-2000) provides many of the display capabilities available on the FT-DX9000 and FT-2000.

- Triple conversion receiver.
- Receive frequency 30 kHz to 56 MHz.
- 5-100 watts out (2-25 watts AM).
- 8 narrow, bandpass filters.
- 1st IF 3 kHz roofing filter.
- High-speed direct digital synthesizer and high-spec digital PLL.
- IF shift / IF width / CONTOUR / notch and DNR.
- CTCSS / DCS encoders / decoders

- built-DSP enhancement with parametric microphone equalizer and speech processor.
- High stability TXCO.
- Built-in automatic antenna tuner with 100 memories.
- 5 voice message memories with the optional DVS-6 unit.
- Large multi-color vacuum florescent display.

Portable All-Mode

HF + 6m + 2m + 70cm

Now with TCXO built-in

All Mode FT-897D

\$CALL
HRO Discount Price



The innovative FT-897 rugged multiband portable transceiver covers the 160-10 meter bands (now includes 60m) plus 6m, 2m and 70cm. All mode operation includes SSB, CW, AM, FM and digital. With the internal batteries (optional) it will produce 20 watts out. With an external 13.8 volt DC supply it will produce 100 watts out.

- 200 memory channels with alphanumeric tags.
- ATAS-120 / 100 compatible.
- Digital signal processing built-in.
- Bolt-on FC-30 automatic antenna tuner optional.
- IF shift control.
- IF noise blanker.
- AGC selector (auto / fast / slow / off).
- VOX operation.
- CTCSS / DCS encoders / decoders built-in.
- Collins® 2.3 kHz SSB mechanical filter and 500 Hz CW filter (optional).
- Built-in 3 message memory keyer with adjustable pitch control.

- Spectrum scope.
- Automatic repeater shift.
- Smart Search™.
- Automatic beacon mode.

Accessories:

- **FNB-78** internal 4.5 Ah NiMH battery **\$CALL**
- **FC-30** antenna tuner **\$CALL**
- **FP-30** internal power supply **\$CALL**
- **CD-24** 4-hour charge adapter for FNB-78 **\$CALL**
- **PA26B** charger for CD-24 **\$CALL**
- **ATAS-120** active tuning antenna **\$CALL**
- **MMB-80** mounting bracket **\$CALL**

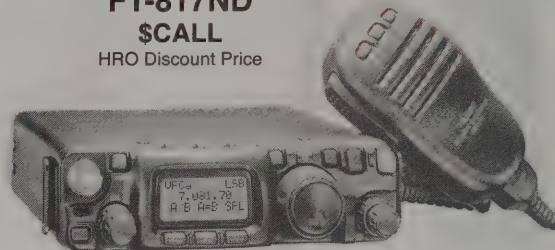
5 Watt Backpack HF Plus

**Now with FNB-85 battery
1400 mah NiMH
+ NC-72B Charger**



FT-817ND

\$CALL
HRO Discount Price



- Product concept: fully self-contained battery-powered low-power amateur transceiver for portable, camping, or mountain use. Includes 60m.
- Transmits on: 160-10 m, * 50 / 144 / 430-450 MHz, plus Alaska Emergency Channel (5167.5 kHz).
- Receives: 100 kHz-56 MHz; 76-154 MHz; 420-470 MHz. (Exact frequency range may differ slightly.)
- Operating modes: USB, LSB, CW, AM, FM, WFM, digital (AFSK), packet (1200 / 9600 FM).
- Power output: 5 watts SSB / CW / FM with 13.8V external DC; 1.5 W AM carrier; 2.5 W SSB / CW / FM with 9.6V Ni-Cd Pack or 8 "AA" batteries (AM: 0.7 W); up to 5 W SSB / CW / FM power (maximum) programmable via menu on NiMH / AA cells.

10m / 6m / 2m / 70cm FM

FT-8900R

\$CALL
HRO Price



The FT-8900 combines "traditional" 2m / 70cm local communications with the exciting capability of Sporadic-E or F2 DX on the 10m and 6m bands, allowing nationwide FM communication.

- Covers 28-29.7 / 50-54 / 108-180 / 320-480 MHz and 700-985 MHz (cellular blocked and non-restorable).
- Independent 2-channel, dual-receive, full duplex.
- High power output with 50 watts on 10m / 6m / 2m and 35 on 70cm.
- Large, easy-to-read LCD display.
- Built-in duplexer.
- More than 800 memory channels. 799 "regular," 6 "home," 5 sets of band edge, and 6 "Hyper."
- Cross-band repeater capability.
- Versatile scanning.
- CTCSS / DCS built-in.
- User-programmable mike keys.
- Remote head mounting with optional YSK-800.

HF TRANSCEIVERS

The Smallest HF + 6m + 2m + 70cm

Optional Remote Head FT-857D

\$CALL - HRO Discount Price

The world's smallest HF/ VHF / UHF mobile transceiver provides base station performance from an ultra-compact package. The convenience of remote-head operation (optional YSK-857 separation kit) makes the FT-857 ideal for mobile or portable work.

The power amplifier uses bipolar transistor devices for low noise, low distortion and high reliability. Has an extensive cooling system with a thermostatically-controlled fan and aluminium die cast chassis.

The receiver front-end has a very low noise floor and wide dynamic range. Features a double conversion superheterodyne system (single on WFM) with the second IF at 455 kHz; bandpass filtering, device selection and gain distribution for strong signals. On VHF and UHF, the very low noise MOSFET preamplifier and active

DBM mixer aid in working weak signals and rejecting intermodulation.

- Receive coverage 100 kHz to 56 MHz, 76-108 MHz, 420-470 MHz. Includes 60m.
- Transmits 160-6 m, 144-148 MHz, 430-450 MHz and 5167.5 kHz (Alaska emergency frequency on USA version).
- SSB, CW, AM, FM, packet (1200 / 9600 bps) operation.
- Power out: 100 W (160-6 m), 50 W (2 m), 20 W (70 cm).
- DSP bandpass filter, DSP auto-notch filter, DSP noise reduction, microphone equalizer.



Now with
DSP-2 built-in

- VHF / UHF features: versatile tone control selections, automatic repeater shift, Smart Search™, Spectrum Scope and ATS™.
- Easy-to-use "Scrolling Front Panel" keys allow

adjustment of several transceiver functions during use.

- DXer features: IF shift, IF noise blanker, intercept point optimization, adjustable AGC, RIT, RF gain control, and VOX.
- CW features: built-in electronic keyer, CW message memory with beacon mode, CW pitch / sidetone control, and CW trainer.
- Easy data mode for operation on 1200 / 9600 bps FM packet, RTTY, SSTV or PSK31. Rear panel 6-pin mini-DIN connector for each connection of these modes.
- Memory system: 200 main memories, 8 character alphanumeric labels. 10 groups with 20 memories each. "Quick Memory" and "Home Channel" for each band.
- Large multi-color display.
- Battery voltage meter, TX meter selection, two antenna connectors, TX / RX status LEDs, versatile scanning features, auto power off, time out timer and CAT system.

Compact HF + 6m Transceiver with DSP



FT-450D \$CALL

HRO Discount Prices



The super compact FT-450D HF transceiver with DSP is just 9" W X 3.3" H X 8.5" D and weighs 7.9 pounds. It transmits on HF bands plus 6 meters. It has an easy-to-read 9-segment LCD display, DSP modulation / demodulation, microphone equalizer with speech processor, VOX

operation. Other features include: 2 voice memory channels, 500 memory channels, IF shift, clarifier, electronic built-in keyer, FSK-RTTY operation, long wire antenna usage with optional FC-40. Includes a built-in antenna tuner. The FT-450D includes a 400 MHz built-in IF DSP, receive range 30kHz to 54 MHz, power out 100 watts on HF and 6 meters, Bar-Graph metering, builtin TCXO ±1 ppm/hour after warmup, AGC fast/slow/auto/off selection, dedicated data jack for FSK/RTTY, CTCSS, digital voice announcement of frequency/mode/S-meter, CW beacon, 10Hz roofing filter.

Options include:

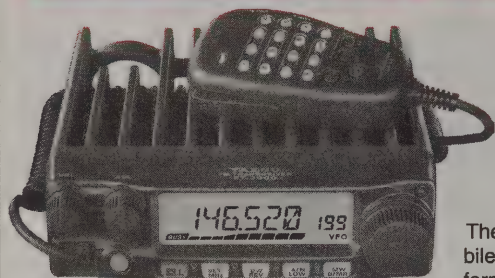
- ATAS-120: Active Tuning Antenna System for mobile, portable or apartment / balcony use. Designed for use on the 7 / 14 / 21 / 18 MHz amateur bands. Can be used fully retracted on the 50 / 144 / 430 MHz bands.
- Collins® Mechanical Filters:
YF-122S 2.3 kHz SSB
YF-122C 500Hz CW
YF-122CN 300Hz CW
- YSK-857 Separation Kit
- TCXO-9 High Stability Reference Oscillator.

Yaesu HF Specifications

Model	Frequency Range	AC	DC	Xmit	Rec	AM	FM	SSB	CW	Mike Z ohms	Receive Circuitry	Sensitivity†	RIT / XIT Range	Audio Output	HRO Price
FTDX9000MP	30 KHz-60 MHz	117		9 A		100 W	400 W	400 W	400 W	200-10K	Triple	< .2 µV	±9.99 kHz	2.5 W	CALL
FTDX9000D	30 KHz-60 MHz	117		6.5 A		75 W	400 W	200 W	200 W	200-10K	Triple	< .2 µV	±9.99 kHz	2.5 W	CALL
FTDX9000Contest	30 KHz-60 MHz	117		6.5 A		75 W	400 W	200 W	200 W	200-10K	Triple	< .2 µV	±9.99 kHz	2.5 W	CALL
FTDX5000 Series	30 KHz-60 MHz	90-264		770VA		50 W	200 W	200 W	200 W		Triple	< .2 µV		2.5 W	CALL
FT-897D	100 kHz-30 MHz 50-54 MHz 144-148 MHz 430-450 MHz	117 / 234**	13.8 VDC	23 A	1 A	20 W (batt)* 100 W +50 W @ 20 W%	20 W (batt)* 100 W +50 W @ 20 W%	20 W (batt)* 100 W +50 W @ 20 W%	20 W (batt)* 100 W +50 W @ 20 W%	200-10K	Double	< .2 µV	±9.99 kHz	2.5 W	CALL
FT-817ND	100 kHz-56 MHz 76-154 MHz 420-470 MHz		13.8 VDC	2 A	450 mA	1.5 W	5 W	5 W	5 W	200-10K	Double	< .25 µV	±9.99 kHz	1.0 W	CALL
FT-857D	See page 19		13.8 VDC	22 A	1 A	25 W 12.5 W 2m 5W 70cm	100 W 50 W 2m 20 W 70 cm	100 W 50 W 2m 20 W 70 cm	100 W 50 W 2m 20 W 70 cm	200-10K	Double	< .2 µV	±9.99 kHz	2.5 W	CALL
FT-450D	HF + 6m		13.8 VDC	22 A	1.5 A	25	100 W	100 W	100 W	200-10K	Double	< .25 µV	±9.99 kHz	2.2 W	CALL

† Sensitivity measurements for 1.8-30 MHz SSB, CW @2m %70cm *HF-6M battery +HF-6M AC/13.8VDC **Optional module required

2m Mobiles



FT-2900R
2 meters
\$CALL

The FT-2900R, King of the Mobiles, is a ruggedly-built, high-performance 75-Watt 2-meter mobile FM transceiver with outstanding

receiver performance and 3 watts of loud clean audio.

- 75 Watts of solid RF power with no cooling fan needed! Four selectable power output levels are provided: 75 / 25 / 10 / 5 Watts. Power levels may be stored in memory.
- 221 memory channels, including 200 "regular" memories, ten pairs of band-limit memories, and an instant-recall "Home" channel you can dedicate to a frequently-used repeater or simplex frequency. Memories can store repeater shift information, CTCSS/DCS data, power output level, scanning status ("Skip"), and Alpha-Numeric labels.
- CTCSS and DCS encode / decode built in.
- Weather channels with "severe weather" alert.
- Wide / narrow deviation selection.
- Versatile scanning capability.
- Smart Search™.
- The FT-2900R includes a conveniently-located "Internet" key, for quick access to Internet-linked repeater systems. Internet repeater linking allows you to talk to other Amateurs throughout the world with outstanding voice signal quality. The "Internet" key may be configured to send either a single DTMF digit or a DTMF string, for operation on a WIRES™ (Wide-Coverage Internet Repeater Enhancement System) repeater.
- MH-48A6J DTMF direct access microphone.
- RF-level squelch.
- Interactive programming menu.
- Supply voltage display.
- Large 6 digit backlit LCD display.

FT-1900R
2 m + extended
receive

\$CALL - HRO Price



The rugged, high-performance FT-1900R is a 55-Watt 144 MHz mobile FM transceiver with outstanding receiver performance and crisp, clean audio. Optimized for ease of operation day or night.

- 55 Watts of power output, with "low power" settings of 25, 10, and 5 Watts.
- Four user-programmable "soft" keys on the microphone.
- 200 regular memories, ten pairs of band-limit memories, 8 memory banks, and a one-touch "Home" channel. Memory channels store repeater offset information, CTCSS or DCS data, and can have a six-character label appended. Memories may be allocated into as many as eight banks for more efficient scanning.
- Receiver coverage 136-174 MHz, includes commercial, military, public safety, and marine communications.
- Built-in CTCSS / DCS encoder / decoder.
- Automatic repeater shift.
- Enhanced paging and code squelch system.
- Security password helps prevent unauthorized use.
- Severe Weather Alert feature (US only).
- Cloning.
- RF squelch, CW training.
- Multiple scanning modes.
- Large 6 digit backlit LCD display.
- 3 Watts of audio output.
- Adjustable TX deviation level.
- Automatic power off.

Dual Band Mobile



FT-7900R
\$CALL
HRO Price

The FT-7900R provides 50 Watts of power on the 144 MHz band, and 40 Watts on 430 MHz. It is designed for simplicity of operation along with high performance in the receiver section. The FT-7900R is ideal for the active Ham who has a need for simplex, repeater, or FM satellite operation on both bands, but without the complication of cross-band repeat capability.

- Wide frequency coverage.
- More than 1000 memory channels, each capable of storing a 6-character alpha-numeric label.
- WiRES™ internet linking capability.
- YSK-7800 remote mounting kit (option).
- One-touch "Hyper Memory" operation.
- High power output - 50 Watts of power output on VHF and 40 Watts on UHF.

FT-8800R
\$CALL - HRO Price



The FT-8800R provides easy operation, outstanding receiver performance and crossband repeat capability.

- Wide receiver frequency coverage of public safety, commercial, aircraft and government communications.
- Independent two channel operation operates as two radios in one.
- Large LCD display.
- High power output with 50 Watts on 2m; 35 on UHF.
- Over 1000 memory channels with 512 regular memories on each band.
- One-touch band-pattern.
- CTCSS and DCS tone systems.
- User-programmable microphone keys.
- Convenient remote-head mounting capability with the optional YSK-8900 separation kit.

DC Noise Filter

LF-1

\$CALL - HRO Price

Especially designed for mobile use, consists of a heavy choke coil to suppress alternator DC line noise.

2m / 440 MHz Dual Band Mobiles



FTM-10R

\$CALL

HRO Discount Price

The FTM-10R is a new concept mobile rig. Mount it most anywhere using the separate front panel. Front panel magnets allow installation without screws in many cases. The rig features 13.8 VDC from an external source; RF power output of 10 W on 2m and 7 W on 70cm. Unit is waterproof and can be mounted on motorcycle handlebars. PTT switch on the front panel allows transmission without connecting any microphone. Mobile bracket allows for easy release of the radio.

- 50W on 2m and 40W on 70cm.
- Wide receiving capability and independent AM / FM broadcast receiver.
- Loud audio external speaker (optional MEK-200-M10) and hands-free Bluetooth unit.
- High brightness and ocean blue color LCD display.
- Large aluminum die cast chassis.
- Waterproof front panel.
- Great for the motor sports scene. PA function, intercom function, VOX.
- Line input can be connected to external audio devices.
- Message transfer function.
- Wireless clone feature and WiRES.
- Lap counter, interval timer / alert, clock and date display.

Accessories for FTM-10R

Model	Description	HRO Price
MMB-M10	Multi-angle Stand Bracket	CALL
MMB-M11	Multi-angle Handle Bar Bracket	CALL
CT-M10	Separation cable - 12 ft	CALL
MLS-200-M10	External Speaker - waterproof	CALL
MEK-M10	Microphone Jack	CALL
MH-68A6J	Microphone - 16 key	CALL
MH-68B6J	Microphone - 3 key	CALL
CT-M11	External after-market headset cable	CALL
Bluetooth Kit	Kit with BH-1, BU-1, CAB-1	CALL
BH-1	Bluetooth Headset	CALL
BU-1	Bluetooth Unit - mounts in radio	CALL
CAB-1	Charger Sleeve for BH-1	CALL
FEP-4	Earphone for either ear to BH-1	CALL
YHA-M10	Mobile Antenna	CALL
AMK-1	Antenna Base	CALL
COX-2MM	Antenna Cable	CALL



FTM-350AR

\$CALL

HRO Discount Price

Yaesu's advanced 2 m / 70 cm dual-band mobile has GPS / APRS / SmartBeaconing™ features. (GPS with optional FGPS-1 GPS receiver.)

- Built-in 1200 / 9600 bps TNC compliant with AX.25.
- Separate control head with 10 foot control cable included.
- Wideband receive 500 kHz to 999.990 MHz (cellular blocked).
- Large full dot matrix LCD display in choice of colors.
- Multiple memory features including 500 channels with memory name tag function for each band, 9 program-mable band limit channels, 1 rewritable preferred channel for each L and R band.
- 50 Watts power.
- Full duplex operation.
- 1200 / 9600 bps packet port.
- Three speaker system for FM stereo broadcast.
- Easy menu setup.
- Dual band AF monitor to listen to FM / AM while monitoring the ham bands.
- Built-in barometric sensor.
- High speed band scope.
- Bluetooth optional.
- Optional Voice Guide speaks operating frequency and records received signals.

Internet Linking

HRI-100 Wires-II Interface Box



Give your repeater worldwide coverage with the Wires-II Internet repeater enhancement system

\$CALL - HRO Price

Wires™-II uses DTMF signaling to establish a bridge via the Internet from your repeater or home station to another Wires™-II equipped station anywhere in the world. No proprietary tones are used, so any manufacturer's radio (equipped with a DTMF encoding keypad) may be used to bring up the Internet link.

The Wires™-II kit includes:

AP01 CD-ROM, power cable, data cable (RS-232 DB-9 plug), data cable (8-pin mini-DIN plug), two audio cables (3.5 mm plug) and the Wires™-II user / server agreement.

Programming Kits

To Program Handhelds:

ADMS-1F VX-110 / VX-150

ADMS-1G VX-7R

ADMS-1J FT-60R

ADMS-250 FT-250

ADMS-270 FT-270

ADMS-VX170 VX-170

ADMS-VX177 VX-177

ADMS-VX3 VX-3R

ADMS-VX6 VX-6R

ADMS-VX8 (not VX-8GR)

To Program Mobiles:

ADMS-1802 FT-1802

ADMS-1900 FT-1900

ADMS-2H FT-8900

ADMS-2I FT-8800

ADMS-2J FT-2800

ADMS-2K FT-7800

ADMS-2900 FT-2900

ADMS-7900 FT-7900

To Program a Receiver:

ADMS-3 VR-500

To Program HF:

ADMS-4AU FT-817

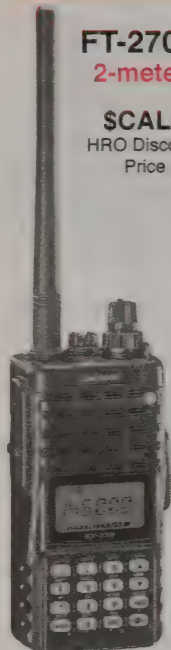
ADMS-4BU FT-857/897

Special offers on www.hamradio.com

Single Band Handhelds

FT-270R 2-meter

SCALL
HRO Discount
Price



The FT-270R is a compact, high-performance FM hand-held providing up to 5 Watts of RF power, along with big audio output (800 mW). Protected against water ingress to IPX7 specifications (submersion for up to 30 minutes at a depth of 3 feet). Features long operating time, using the supplied 1400 mAh NiMH battery pack. 16-key direct keyboard frequency entry and direct DTMF input, with quick, one-touch access to Yaesu's WiRES-II™ VoIP Internet linking system!

- TX: 144-148 MHz; RX: 136-174 MHz.
- 5 watts with power levels hi/ med/ low.
- ARTS System.
- Automatic repeater shift.
- 200 memory channels.
- Ten memory banks for channel allocation.
- CTCSS / DCS included.
- Smart Search™ memories.
- Ten memory banks for channel allocation.
- Adjustable TX deviation level.
- RF Squelch.
- Battery voltage display.

FT-250R 2-meter

SCALL
HRO Discount
Price



Compact yet incredibly rugged, the FT-250R 2-meter handheld is derived from our Vertex commercial transceiver line. The 16-key FT-250R is constructed inside a die-cast aluminum housing, with a large, high-output speaker delivering 700 mW of loud audio for outside field environments. And the illuminated keypad provides easy viewing during nighttime operation. You need a radio that's as tough as your operating environment.

- Large backlit display.
- TX: 144-148 MHz; RX: 136-174 MHz.
- 5 W of stable RF power.
- Direct keypad entry.
- 209 memory channels.
- 7 character alphanumeric display.
- Optional ADMS-1F.
- Smart Search™ auto memory loading.
- ARTS system.
- Convenient access kit for WiRES.
- Adjustable TX deviation level.
- Automatic repeater shift.
- RF squelch.
- TX / RX battery savers.
- Rugged water resistant case.

FT-277 440 MHz 16 Keys

\$149.95
HRO
Discount Price



The FT-277R is a Commercial as well as Field Grade radio with submersible construction. It is Yaesu's direct replacement for the VX-177.

The FT-277R is a compact, high performance FM handheld providing up to five watts of RF power, along with big audio output (800 mW). It is protected against water ingress to IPX7 specifications (submersion for up to 30 minutes at a depth of 3 feet).

It is supplied with a 1400 mAh NiMH battery.

The unit includes direct keyboard frequency entry and direct DTMF input along with quick one-touch access to Yaesu's WiRES-II™ VoIP internet linking system.

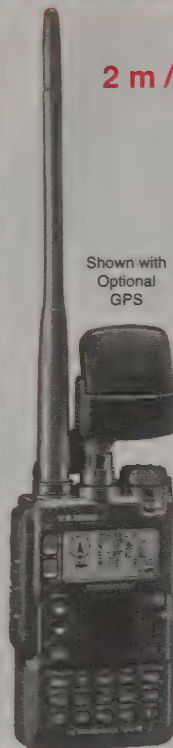
- Full 5 watts FM 430-450 MHz.
- Large backlit LCD display.
- 200 memories.
- Submersible construction.
- Power saving circuit design.

Quad-Band / Dual Band

VX-8DR

2 m / 440 MHz / 70 cm / 6m

SCALL
HRO Discount Price



Shown with
Optional
GPS

The VX-8DR APRS® / GPS / Bluetooth® handheld transceiver includes the features and specification of the VX-8R but also new expanded APRS® capabilities to meet the needs of even the most active APRS® user. The VX-8DR and VX-8R look the same and use the same accessories.

Key Additional APRS® features of the VX-8DR compared to the VX-8R include:

- Smart Beacons™ function: When using APRS® for position tracking, the beacon timing is automatically adjusted to your traveling speed and location to plot a smoother trace that matches your position and movement on a map.
- The number of station list memories has increased from 40 to 50.
- The number of APRS message memories has increased from 20 to 30.
- DIGI-PATH route indication function: The APRS® packet data includes digipeater routing info.
- Heads up compass display to the GPS Screen: Your traveling direction is always toward the top of the display.
- The message received LED flashing rate is selectable.
- The number of DIGI-PATH route settings is increased from 1 to 7.

VX-8GR

2 m / 440 MHz

SCALL – HRO Discount Price



The VX-8GR is a 2m / 70cm only APRS capable handheld that is less expensive and has fewer features than the VX-8DR. The VX-8GR has included the GPS with built-in GPS antenna. It is waterproof (IPX-5) and has a wideband receiver. Receives NFM / FM signals.

**Call a Friendly Ham at
HRO for Current Quotes**

Quad-Band

VX-7R
2 m / 220 MHz
70 cm / 6m

VX-7RB

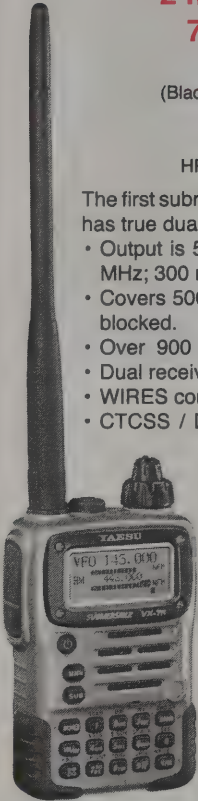
(Black color same specs)

\$CALL

HRO Discount Price

The first submersible amateur handheld has true dual receive.

- Output is 5 Watts on 6m / 144 / 440 MHz; 300 mW on 220 MHz.
- Covers 500 kHz to 999 MHz, cellular blocked.
- Over 900 memories.
- Dual receive V-V, U-U.
- WIRES compatible.
- CTCSS / DCS encoders / decoders built-in.
- 256 color status indicator strobe LCD.
- Submersible (3 feet for 30 minutes).
- ARTS capable.
- "Split-tone" capability including DCS encode-only.
- 7.4 volt 1300 mAh lithium ion battery.
- "Quick-draw" swivel-mount belt clip.
- Spectrum scope display.

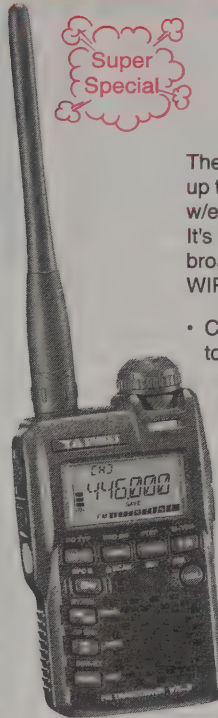


Dual Band

VX-3R
2 m / 70 cm
\$CALL - HRO Discount Price

The world's smallest dual-band HT has up to 1.5 W of output power (up to 3 watts w/external DC power supply - optional). It's your gateway to VHF, UHF, shortwave broadcast, marine and aircraft bands or WIRES-II™ Internet linking.

- Covers 500 kHz to 999 MHz (cellular blocked).
- 1286 memories.
- AF dual monitor function.
- 3 watts out on 2m (2 on rugged aluminum die-cast chassis).
- Auto Range Transponder System (ARTS).
- Exchange text messages with another VX-3R or FTM-10R.
- Mechanical dial lock.
- Frequency Counter operation.
- Emergency Automatic ID function..
- Optional "AA" battery case..
- CW learning and training feature.



HRO
Discount Price
FT-60-\$CALL

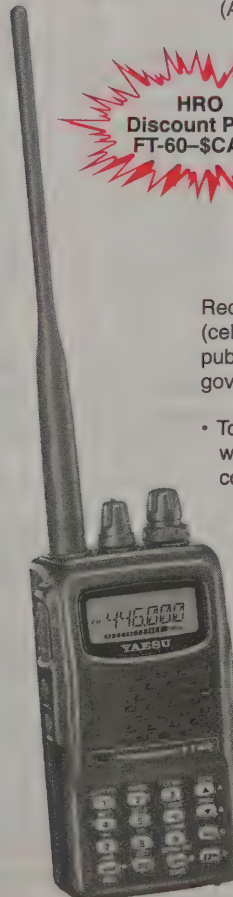
FT-60R
2 m / 70 cm

Extensive Receive Frequency Coverage

Emergency Automatic ID for Search & Rescue

Receives 108-520 MHz and 700-999 MHz (cellular blocked) for monitoring amateur, public safety, business, marine, aircraft, government communications.

- Tough die-cast, water resistant construction.
- 1000 memories w/alphanumeric labels.
- 10 memory banks.
- 5 Watt output.
- CTCSS and DCS (encode/decode) with split tone; DCS encode only capable.
- ARTS™.
- One-touch to NOAA.
- Nine DTMF auto-dial memories.
- WIRES™ Internet linking.
- Huge LCD display.
- Tough die-cast, water resistant construction.
- Two front panel programmable keys.
- Automatic repeat-shift.

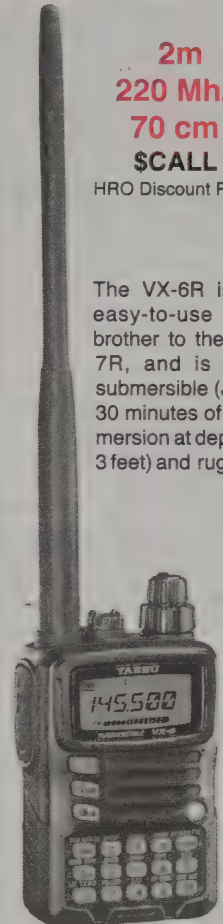


Tri-Band

VX-6R
2m
220 Mhz
70 cm
\$CALL

HRO Discount Price

The VX-6R is an easy-to-use little brother to the VX-7R, and is both submersible (JIS7: 30 minutes of submersion at depth of 3 feet) and rugged.



- Covers 504 kHz to 998.99 MHz (with cellular blocked).
- 5 Watts of power 144 and 440 MHz bands (1.5 W on 222 MHz).
- FNB-80LI 1400 mAh lithium-ion battery pack standard.
- Emergency automatic ID (EAI) system.
- Enhanced paging and code squelch (EPCS).
- Wake-up battery saver.
- Security password.
- 900 memory channels with alphanumeric labels.
- One-touch memory access.
- CW trainer.
- Compact package measuring just 2.3" x 3.5" x 1.1" WHD.
- Oversized volume and squelch knobs.

24 Hour FAX Order Numbers

Anaheim	714-533-9485
Atlanta	770-263-9548
Burbank	818-842-5283
Denver	303-745-7394
New Castle	302-322-8808
Oakland	510-534-0729
Phoenix	602-395-1244
Portland	503-684-0469
Salem	603-898-1041
San Diego	858-560-1705
Sunnyvale	408-736-9499
Woodbridge	703-494-3679

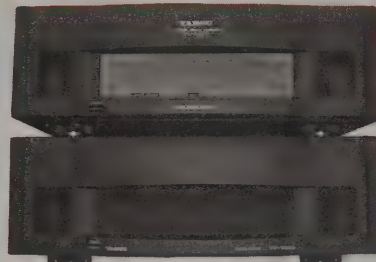
HANDHELD ACCESSORIES	Model	60R	250R	270R 277R	VX- 3R	VX- 6R VX- 7R	VX- 8R
Microphone Adapter	CT-44	*	*		*		
Microphone Adapter	CT-91			*		*	
VOX Headset	VC-24			*		*	
VOX Headset	VC-25	*	*		*		
Speaker/Microphone	MH-34B4B	*	*		*		
Speaker/Microphone	MH-57A4B			*		*	
Speaker/Microphone	MH-73A4B			*		*	
Speaker/Microphone	MH-74A7A						*
Ear Piece Microphone	MH-37A4B	*	*		*		
Ear Piece Microphone	MH37B2B						
Ear Piece Microphone	VC-27			*		*	
Ear Phone	FEP-10						
Microphone adapter	CT-91			*		*	
DC/DC cigar adapter	EDC-5B	*	*	*		*	*
DC/DC adapter	EDC-6	*	*	*		*	*
Wall Charger 117 VAC	NC-72B						
Wall Charger 117 VAC	NC-86B						*
Wall Charger 117 VAC	NC-88B	*		*			
Rapid Charger	CD-15A					*	
Charger Cradle	CD-26			*			
Desktop Charger	VAC-10B/C/U		*				
Desk Top Rapid Charger	VAC-370	*		*			
Battery 1400 mAh	FNB-80LI					*	
Battery 1000 mAh	FNB-82LI				*		
Battery 1300 mAh 7.4 V	FNB-83	*	*	*			
Battery 1100 mAh 7.4 V	FMB-101LI						*
Battery 1800 mAh 7.4 V	FNB-102LI						*
Battery case AA batteries	FBA-23					*	
Battery case AA batteries	FBA-25	*	*	*			
Battery case AA batteries	FBA-37				*		
Battery case AA batteries	FBA-39						*
Cloning Cable	CT-27	*					
Cloning Cable	CT-134						*
Mike Adapter	CT-44	*			*		
Ant Adapt SMA - BNC	CN-3	*	*	*	*	*	
Radio Case (soft)	CSC-88					*	
Radio Case (soft)	CSC-92				*		
Radio Case (soft)	CSC-93						*
Leather Case	LCC-150/TT						
Leather Case w Swivel	LCC-150S/TT						
DTMF Decoder Unit	FTD-27			*			
Barometric pressure sensor	SU-1					*	
GPS Antenna Unit	FGPS-2						*

Yaesu Handhelds

Model	Frequency	Mode	Pwr Supply	Power Out	Current Transmit	Drain Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Price
FT-60R	2m/70 cm	FM	7.2 VDC	5 W	1.5 A	125 mA	.16 μ V / 12dB	4.3 (10.9)	2.3 (5.8)	1.2 (3.0)	13.5(370)	CALL
VX-3R	2m/70 cm @#	FM	3.7 VDC	1.5W††	1.3 A	120 mA	.16 μ V / 12dB	3.2 (8.1)	1.9 (4.7)	0.9 (2.3)	4.6(130)	CALL
VX-6R	2m/70 cm @#	FM	7.4 VDC	5 W***	1.5/1.6/1.8 A	150mA	.16 μ V / 12dB	3.4 (8.7)	2.3 (5.8)	1.1 (2.8)	9.5(270)	CALL
VX-7R	50/144/440MHz	FM/AM	7.4 VDC	5 W †	1.6/1.7/1.4 A	150mA	.16 μ V / 12dB	3.4 (8.7)	2.3 (5.8)	1.1 (2.8)	8.9(255)	CALL
VX-8DR	50/144/220/440MHz#@	FM/AM	7.4 VDC	5 W *	1.9 A	240mA	.16 μ V / 12dB	3.7(9.5)	2.4 (6.0)	0.9(4.2)	8.5(240)	CALL
VX-8GR	2m/70 cm #@	FM	7.4 VDC	5 W *	1.9 A	240mA	.16 μ V / 12dB	3.7(9.5)	2.4 (6.0)	0.9(4.2)	8.5(240)	CALL
FT-270R	144-148 MHz#	FM	7.2 VDC	5 W	1.5 A	165mA	.16 μ V / 12dB	4.7 (12.0)	2.4 (6.0)	1.3 (3.2)	13.8 (390)	CALL
FT-277R	430-450 MHz	FM	7.2 VDC	5 W	1.5 A	165mA	.16 μ V / 12dB	4.7 (12.0)	2.4 (6.0)	1.3 (3.2)	13.8 (390)	CALL
FT-250R	144-148 MHz#	FM	7.2 VDC	5 W	1.3 A	130mA	.16 μ V / 12dB	4.3 (10.8)	2.3 (5.8)	1.1 (2.65)	12.4 (352)	CALL

*Power output can be increased depending on the battery pack selected. #Extended Rx range @Cell phone blocked. **2 and 6m 4.5 W UHF.
†300 mW on 220 MHz. ††1.5 W 2m/1 W UHF. *** 1.5 W on 220 MHz †1.5 watts on 220 MHz

HF Amp & Power Supply



Quadra System

\$CALL
HRO Price

Here's all the linear amplifier you should need for operation on both HF (160 - 15 meters) and 6 meters. It is designed for automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990 and the FT-900 HF radios. The amp features 8 MRF150 power MOSFET transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC.

The separate power supply, the VP-1000, allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is 500 watts on HF. The amplifier comes with a built-in high speed antenna tuner with four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

Power Supplies

FP-1030A

\$CALL
HRO Price

FP-1023A

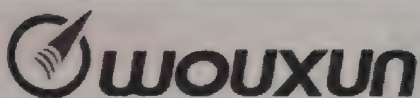
\$CALL
HRO Price



Yaesu's two low profile switching powers supplies operate on 110 or 220 VAC. The FP-1023A has 23 amps continuous and 25 intermittent. The FP-1030A is 25 amps and has meters.

DUAL BAND HTs

GLOBAL POSITIONING



KG-UV3D-2 / UHF
Dual Band
2m / 440 MHz



KG-UV3D-2 / 220
Dual Band 2m / 220 MHz
\$CALL

Both Wouxun Dual band radios have a 1700 mAh Li-ion battery back standard with up to 13 hours operating time. The radios are compact with five watts out on 2 meters and 4 watts on 220 or 440 depending on the model. Other features include:

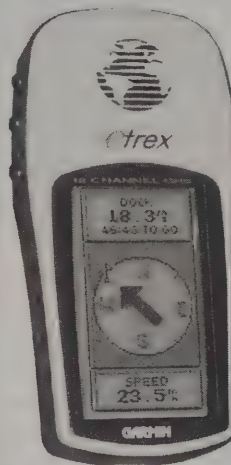
- 18 month limited warranty on the radio against defects in materials or workmanship.
- 6 month limited warranty on the included radio battery and battery charger against defects in materials or workmanship.
- On 2 / 220 version 2 dual band antennas (219-239, 240-280 MHz).
- On 2 / 440 version, a single dual band antenna.
- Belt clip and wrist strap.
- Dual alpha numeric, backlit display with channel name.
- Selectable high / low power settings (2 meters 5 W high / 1 W low; for 220 model or for 440 model 4 W high / 1 W low).
- Loud speaker audio output (500 mW).
- Bright flashlight illumination function.
- 128 memory channels and VOX function.
- Digital FM radio (76-108 MHz) with automatic tuning and storing, radio frequency display and 18 FM memories in 2 banks.
- Wide / narrow bandwidth selection (25 or 12.5 kHz).
- Windows PC programmable. Free software available by download.
- Optional WXUSB or WXSER required to connect the radio to the PC.
- Programmable by computer or keypad.
- Radio to radio cloning with optional WXCLN cable.
- 105 groups DCS / 50 groups CTCSS.
- CTCSS encode / decode.
- Stopwatch and SOS function.
- Busy channel lockout and selectable transmit over timer.
- Multiple scan modes including priority scan.
- High contrast white backlit keypad.

Wouxun Accessories

Model	Description	HRO Price
WXBOM	Boom / microphone Headset	\$21.99
WXDHM	Over the ear headset (single ear)	\$14.99
WXUSB	USB Programming Cable	\$16.99
WXSER	Serial (DB9) Programming Cable	\$14.99
WXCLN	Cloning Cable	\$9.99
WXDSC	Dropin Dual Slot Charger with 2nd Battery Slot	\$24.99
WXR6C	6 Unit Drop in Rapid Charger	\$199.95
WXCAR	12VDC Car Charger	\$9.99
WXBTE	Battery Eliminator powers radio from Cigarette Lighter	\$14.99
WXHCB	High Capacity 1700 mAh Li-ion Battery Pack	\$24.99
WXAAB	AA Battery Pack Holder	\$12.99
DC21ST	2.1 mm Straight DC Plug to Powerpole Adapter 3ft	\$5.99
WXSPK	Economy Speaker Microphone	\$16.99
WXHST	Headset Microphone	\$6.99
WXLTR	Leather Case	\$14.99
WXS16	Reverse SMA to SO-239	\$5.99
WXBNC	Reverse SMA to BNC	\$8.99



Global Positioning Systems



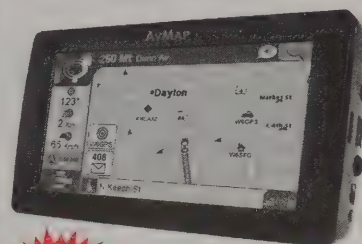
eTrexH™
High Sensitivity
12 Parallel Channels

The six-ounce eTrexH™, only four by two inches, operates 180 hours on two AA batteries. It will maintain satellite lock even while in forest-like conditions. It stores up to 500 user waypoints with icons and has Garmin's exclusive Trac-Back™ to help you return home. Animated graphics help you identify way-points. **HRO Price \$99.99**

eTrex Camo In camouflage casing. Operates on six "AA" batteries (not supplied) or use the included AC adapter on 110-120 VAC. **HRO Price \$129.95**

Call a Helpful Ham at HRO

AvMAP
SATELLITE NAVIGATION



Geosat 6 APRS
The GPS Solution for APRS Operations

Geosat 6 APRS has a metal chassis, a 4.8" full colour display in 16:9 wide-screen format and a magnetic mount for easy mounting in the car. Geosat 6 APRS has a 50 channel -160 dbm tracking sensitivity u-blox GPS engine for fast and highly accurate fix.

New navigation functions include "Trip Computer" that shows overview of the journey, with speed graphs, info about average speed, highest speed reached, stop time etc. Turn-by-turn vocal instructions announce complete street names thanks to the Text-to-Speech technology.

The Geosat 6 APRS comes with a Kenwood-ready cable and exclusive APRS bi-directional RS-232 APRS interface compatible with ALL current APRS ready Kenwood radios. Geosat 6 APRS provides GPS location information for your transmitted APRS beacons, and it shows received APRS information on its map display. It can store up to 1000 APRS contacts and display them on the map.

Set your Geosat 6 APRS to navigate to your favorite APRS mobile station and get rerouting instructions when the new position is reported!

Watch APRS activity on the screen to distinguish between fixed and mobile APRS stations. Used with a Kenwood D710A/E and set in the KENWOOD format sentence, the Geosat 6 APRS supports standardized APRS icons.

Geosat 6 APRS fully takes advantage of the Kenwood format sentence. The Tactical mode allows you to select an APRS contact to see on the full info page its speed, course and altitude in addition to its call sign and position. **HRO Price CALL**

VIBROPLEX®

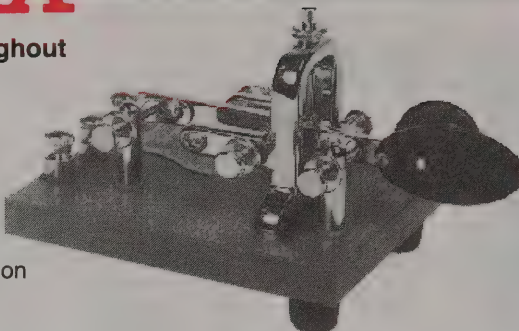
Quality and Pride Throughout

"Vibrokeyer"

The Vibrokeyer is designed for those who prefer a non-iambic paddle. The single lever paddle imitates the automatic dots and dashes of the electronic keyer with the same motion used to operate the "Bug."

Vibrokeyer Deluxe: Highly polished decorative chrome base with bright chrome top parts. Silky smooth movements are jeweled as in fine Swiss watches. **HRO Price \$199.95**

Vibrokeyer Standard: A neat, crisp black textured finish base with bright decorative chrome parts. Non-jeweled movement. **HRO Price \$159.95**



"Original"

The Original Vibroplex is a genuine piece of history. First patented in 1894, the Original is still manufactured today using tools and dies very similar to those used by its inventor, Horace G. Martin. Modern-day operators can put their fist to the

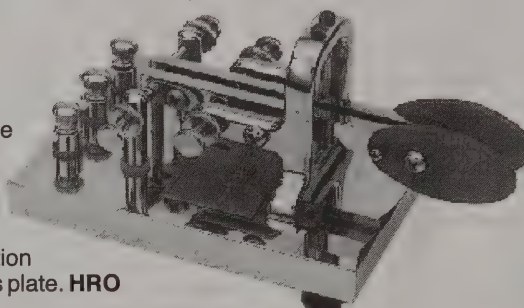
same equipment as the Western Union and railroad operators of old.

"Iambic"

This is the modern descendent of the Original. It incorporates the traditional Vibroplex look for use with modern electronic keyers.

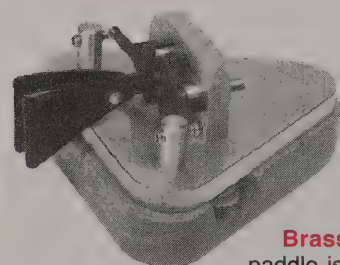
Iambic Deluxe: Same as Presentation but without the 24K gold plated brass plate. **HRO Price \$199.95**

Iambic Standard: A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price \$159.95**



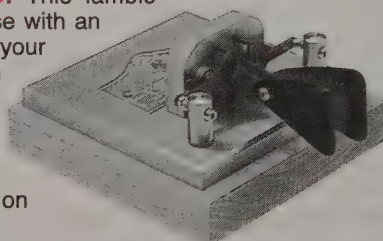
"Brass Racer"

The Brass Racer keys are unique in that there are NO springs in the design. They are crafted from solid brass and mounted on a base of polished hardwood. Tension on the paddle is infinitely adjustable by the use of magnets.

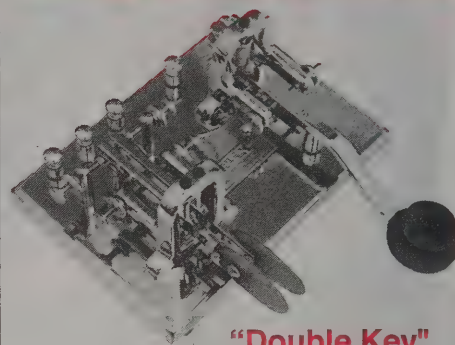


Brass Racer Iambic: This iambic paddle is designed for use with an external keyer or the keyer in your radio. The Triangle Brass base is mounted on polished hardwood. **HRO Price \$149.95**

Square Brass Racer: This key is a departure from our traditional style. A distinctive design of brushed lacquered SQUARE brass mounted on polished hardwood. **HRO Price \$149.95**



Combination



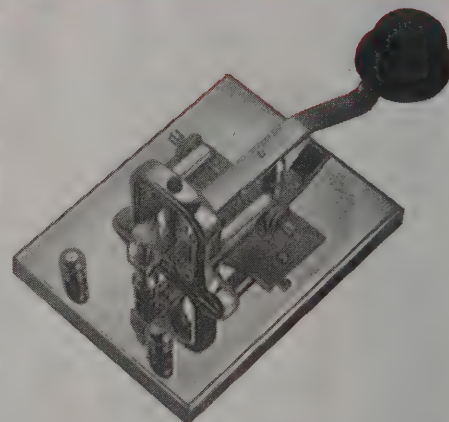
"Double Key"

By popular request, Vibroplex has combined its Straight Key with the classic Vibrokeyer or iambic paddle on one massive steel base. The Double Key allows the operator to instantly switch from an electronic keyer to the personal touch of a straight key.

Double Key Deluxe: Highly polished chrome base with decorative chrome top parts. **HRO Price \$379.95**

Double Key Standard: A neat, crisp, black-textured finish base with bright chrome top parts. **HRO Price \$349.95**

Straight Keys



Vibroplex® offers a STRAIGHT key with a unique mechanical action, unlike any other straight key that has ever been manufactured.

Straight Key Deluxe: Highly polished chrome base with decorative chrome top parts. **HRO Price \$199.95**

Straight Key Standard: A neat, crisp black textured finish base with bright chrome top parts. **HRO Price \$159.95**



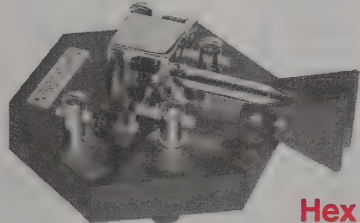
BY Series



Iambic Paddles

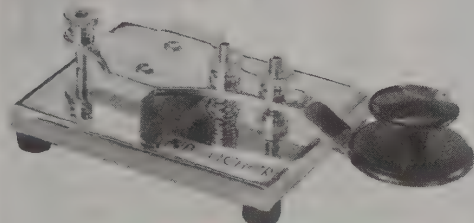
You will enjoy the smooth, precise action of a Bencher paddle with any iambic keyer. These paddles feature a heavy steel base, gold plated silver contact points, non-skid feet, stainless steel adjustable spring, self-adjusting needle bearings, and large acrylic finger paddles.

HRO Prices: BY-1 Black \$109.95
BY-2 Chrome \$129.95
BY-3 Gold \$329.95
BY-4 Gold/Blk \$199.95



Hex Key

Gold plated silver contacts. Molded acrylic finger paddles. Polished chromium parts. Magnetic tension adjustment and adjustable contact spacing. Black powder coated steel base **HRO Price \$219.95**

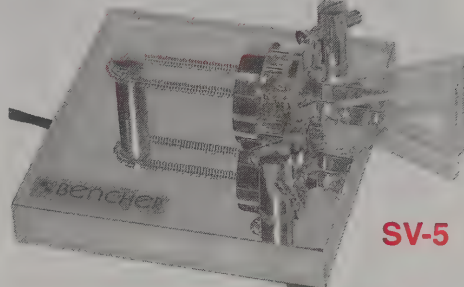


RJ Series Hand Keys

The "RJ" hand keys have an advanced American-style design derived from the telegraph keys that won the west, yet with modern features like Oilite bearings, a solid navy knob, gold-plated solid silver contacts, full locking adjustments of all tension and spacing parameters, and Bencher quality materials throughout. These keys are ideal for the new amateur just mastering code as well as the old time brass pounder anxious to "clear the hook." This key offers the Morse code operator an investment that will bring years of pride and satisfaction. Try the Bencher "RJ" hand key at your nearby HRO. You will be convinced there is no better key available.

HRO Prices: RJ-1 Black \$109.95
RJ-2 Chrome \$139.95

Attention CW Ops & Paddle Collectors



SV-5

Gold Over Chrome Iambic Paddle Cable and Plug Installed

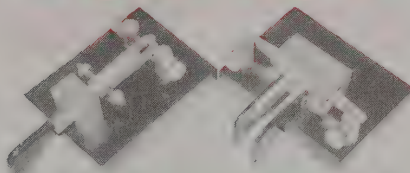
The Bencher SV-5 is an HRO Exclusive. This gorgeous Gold Paddle on a polished chrome base is produced in limited quantity. The paddle is serialized. Bencher will drop ship to your QTH directly from the factory upon receiving your order. Order yours today to ensure the lowest serial number. This paddle includes the pre-wired cable as a bonus. **HRO Price \$219.95**

ST Series Single Lever Paddles

Superb Bencher features and construction for the ham who prefers single lever operation.

HRO Prices: ST-1 Black \$119.95
ST-2 Chrome \$139.95

KENT



Kent Paddles

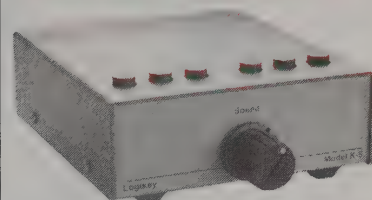


Kent Straight Key

These paddles offer a smooth feel with sealed ball bearings. Precise gap adjustments with knurled heads on fine pitched screws and locking nuts. Made from solid brass within a permanent brass housing.

Twin Paddle (TP-1) \$149.95
Single Paddle (SP-1) \$139.95
Straight Key (SK-1) \$129.95

LOGIKEY



K-5

Iambic Memory Keyer

Fully iambic keyer can emulate most other keyers including Curtis "A" timing and Accukeyer. It works with single-lever, non-iambic paddles.

Has 6 active messages plus 12 "banked" messages, 1530 characters total. Messages may "call." Others contain programmed functions, loop for continuous replay, can allow break-in for paddle-inserted text with automatic resumption. Existing messages can be edited. Ultra Speed mode allows messages at speeds to 990 WPM! Contest serial number: 001 to 9999, with push-button decrement if needed.

Linear speed control: 5 to 60 WPM. Adjustable weighting: 25% to 75%. Adjustable frequency sidetone monitor, 500-900 Hz.

Internal monitor level control. Tune function for transmitter adjustment, hand key mode from paddle. Operator selectable automatic character spacing. Full beacon capability.

Messages and keyer configuration saved if power is lost. Variable compensation for QSK transmitter character shortening. Keyer offers precise speed read-out. Keys all solid state and most tube rigs. No paddle "buffering" or "debouncing" required with any paddle.

Comes complete with printed manual (English). Runs on 12 volts DC, less than .1 amp, or on 3 AAA batteries when installed in internal battery pack. 90 day limited warranty. **HRO Price \$149.95**



PR-781

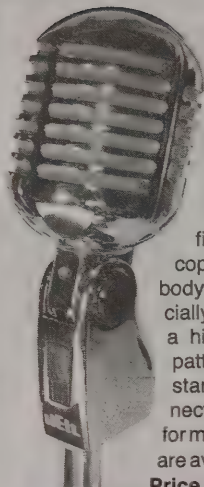
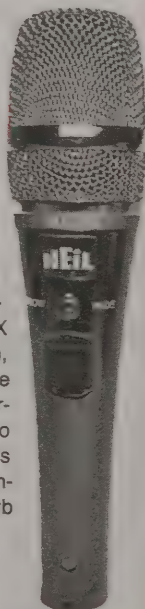
This is a truly remarkable dynamic microphone! From the Amateur Radio division of Heil Sound, Ltd., comes the PR 781, a professional-quality dynamic cardioid microphone that is specifically designed for use with most elite-class transceivers from Kenwood, Yaesu, Ten Tec and Icom. Heil engineers were requested by Icom to develop a very special microphone package for their new IC-7800 radio. They didn't want just a microphone; they wanted a SUPER microphone for a super radio, and the Heil PR 781 was born. The PR 781 is an improvement on the popular PR 780; it's a beautiful performer into just about any microphone input, such as TS 870, 950, Pro 1, 2, 3, 7800, Yaesu Mk 5, MP, 2000, and 9000. Using one of the dynamic elements from the Heil broadcast division, the PR 781 offers a wide frequency response, while keeping that traditional Heil Sound articulation of the speech pattern. Its clarity and fullness are without peer in the Amateur Radio world. The PR 781 comes with the SM-3 mount. **HRO Price \$189.95**

GM / GMV Series

The "Gold Standard" GM Series has become the most-widely-used dynamic microphone for Amateur Radio. Available in the GM 5 configuration (with the full-range element), the GM 4 version (with the HC-4 "DX Dream Machine" element), or the high-impedance GM "Vintage" (GM-V) version, the GM Series also includes the Heil Sound's "broadcast" wide-frequency element, for superb fidelity.

GM-4 with HC-4
HRO Price \$149.95

GM-5.1 HRO Price \$149.95



Heritage™

The Heritage is a high-performance dynamic microphone, yielding a remarkably natural, clear sound. Its special "Showchrome" chrome finish is plated over a copper-clad molded steel body. The Heritage is specially designed to produce a high directional cardioid pattern. It is fitted with a standard 3-pin XLR connector, and adapter cables for most all amateur base rigs are available as options. **HRO Price \$169.95**

For Icom Radios

ICM Salvation for Icom Users!

The iCM microphone is a high-quality microphone for early Icom transceivers. It features a high-quality, high-gain condenser element that provides full-bodied audio with plenty of drive to match up with the low-gain audio systems of the earlier Icom rigs. It also works great with the higher-gain "Pro" radios and IC-7800 from the current Icom line. **HRO Price \$109.95**



Mount



HB-1 Economy Microphone Boom

The HB-1 is an articulated arm of very substantial steel channel structure, balanced by four external springs. It is capable of supporting microphones up to 2.5 lbs. The HB-1 is shipped with a brass lined 'C' clamp mount that accepts up to a 1.5" thick table.

The HB-1 Boom accepts all of the standard 5/8" -27 threaded microphone hardware. It will fit all of the brass lined Heil mounting accessories: **DT-1** Flush Mount that mounts through a 1.5" hole in the desk top.

FL-2 Flange Mount secures to any flat surface.
WM-1 Wall Mount.
RS-1 12" Riser Mount

The threaded chrome stem can be secured into it's needed position by tightening the thumb screw. **HRO Price \$69.95**

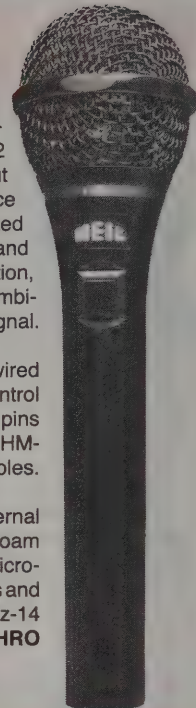


HM-12 Designed for Hams

The high output full range "Genesis" dynamic element in the HM-12 is designed to work with just about every amateur radio low impedance transmitter. The element is mounted in a unique internal shock mount and exhibits nearly -35 dB of rear rejection, which reduces background and ambient noise from the transmitted signal.

The "soft touch" PTT switch is wired to pins 3 and 4 for transmitter control with the microphone signal fed to pins 1 and 2 of the 4 pin XLR. The Heil HM-12 uses Heil CC-1 connecting cables.

This microphone has a unique internal windscreen plus an external foam windscreen. It has the 5/8" -27 microphone clip designed for our booms and stands. Frequency response: 80 Hz-14 kHz @ -55 dB. Satin black finish. **HRO Price \$69.95**



Handheld



Handi-Mics

The Handi Mic is an ultra-compact hand microphone utilizing a special open sorbothane shock mount, yielding superior audio compared to the standard microphones offered by the radio manufacturers. The Handi Mic is available with the HC-4 "DX Dream Machine" element, or the "iC" element designed for Icom rigs; a special "Pro" version is also available, with a wide-frequency "broadcast" element that sounds great on FM mobile rigs. **HRO Price CALL**



Dash hanger

Model	Element	PTT
HM-4	HC4 DX Dream Machine	Yes
HM-iC	Electret for most Icom	Yes
HM-PRO	Wide range broadcast	Yes
HM-PRO+	Used on live sound stage & as an interview microphone	No*

* 3 pin connector

MICROPHONES

Heil PR40

The PR 40 was designed for commercial broadcast, live sound and recording. It features the Heil Dynamic element with a perfectly flat response from 28 Hz all the way up to 18 kHz and has gorgeous articulation. The PR 40 is shipped with the SM-3 5/8" -27 mount and a lined metal carrying case. All the PR Series microphones require additional cables to interface

with your transceiver. **HRO Price \$325.95**

Heil PR30

The PR 30 was designed for commercial broadcast, live sound and recording. It has comparable sound to the finest condenser microphones because of its wide frequency response, excellent transient response and low IMD. The PR 30 comes standard with the SM-3 5/8" -27 mount. All the PR Series microphones require additional cables to interface with your transceiver. **HRO Price \$249.95**

The Fin™

The Fin utilizes the PR-20 element so popular in the professional audio realm. It is housed in a gorgeous high-gloss chrome-finish enclosure reminiscent of the Heritage microphone. If phantom power (not compatible with Icom transceivers) is provided to The Fin, the blue wind screen becomes illuminated by 4 imbedded LEDs. **HRO Price \$196.95**

Spotlight Series

These professional quality, dynamic, cardioid PR20 microphones are ideal for broadcast recording and live sound. They employ a smooth, flat response over a wide frequency range and have excellent transient response. Choose a gorgeous finish in pearlized red, pink, or white enamel. The Spotlight Series requires additional cables to interface with your transceiver.

HRO Prices: Pink Pearl 20 \$179.95
Red Pearl 20 \$179.95
White Pearl 20 \$179.95

PR20 / PR20UT

The PR 20 was designed for commercial broadcast, live sound and recording. With a smooth, flat response over a wide frequency range, it uses the Heil Pro Series

Shown with optional classic base stand.

microphone element for excellent transient response, low IMD and reduced proximity effect. The PR 20 comes standard with 3 mesh screens (black, gold and silver). All PR Series microphones require additional cables to interface with your transceiver. **HRO Price \$150.00**

PRO20UT is the PR20 without packaged extras. Includes silver mesh grill, foam wind screen, and mic clip in padded vinyl zipper bad. **HRO Price \$99.00**

Pro Connector Cables

This 8 ft long cable connects the Classic Pro, Pro, and Heritage microphones to your 8-pin Kenwood, Yaesu, or Icom transceiver. Made with Heilwire to help reduce RFI and noise. Pig tail easily connects to HS-1 or FS-2.

CC-1 XLR Y (Yaesu cable) \$39.95
CC-1 XLR I (Icom cable) \$39.95
CC-1XLR K (Kenwood cable) \$39.95

Mounts

PL-2T Studio Boom

The PL-2T "Topless" boom is a unique cantilevered mount that gives your station a professional-looking solution for mounting your base station microphone. It features a unique channel with a removable cover that lets you tuck the microphone cable away for a clean, clutter-free installation. The PL-2T accepts all Heil Sound industry-standard 5/8" X 27 microphone mounting clips. **HRO Price \$119.95**

WM-1

Vertical Surface Mount

The WM-1 is a unique mount for the Heil booms that allows them to be mounted on a vertical surface. The brass insert of the WM-1 insures smooth, perfect fit. **HRO Price \$22.95**

SB-2 Small Boom

Extends from 10 to 24 inches with angle adjustments for positioning. Standard 5/8 X 27 thread. Includes Teflon stem adapter to mount into all of the Heil PL2T mounts. Comes with the C clamp. **HRO Price \$59.95**

SM-2B black deluxe shock mount \$99.95
SM-2C chrome deluxe shock mount \$99.95

RS-1 Riser

12" Riser allows you to mount the PL2T behind the transceiver or console and lift the base 12" from the table. Works with SB-2 or PL-2T. **HRO Price \$29.95**

FL-2

Flange Mount

With brass insert. Fits the PL-2T & SB-2. **HRO Price \$28.95**

SM-1 Shock Mount

microphone not included

The ultimate mount for Pro, HM-10 or ICM can be used on all booms or stands. 8 point flexible suspension supports and isolates the Heil microphone from mechanical vibrations. 5/8" X 27 standard threads will mount onto microphone stand and boom arms. (Shown with the GM-5 microphone, not included.) **HRO Price \$79.95**

CB-1 PTT Classic Base

Beautiful reproduction of a 1930 RCA microphone base. Heavy three pound cast steel with stainless trim. 3" chrome mount accepts 5/8" X 27 hardware. **CB-1 PTT w/ PTT switch HRO Price \$77.95**

DT-1

Desktop Flush Mount

Allows PL-2T and SB-2 to slip into 1-1/2" hole drilled into desktop. **HRO Price \$35.95**



Proset

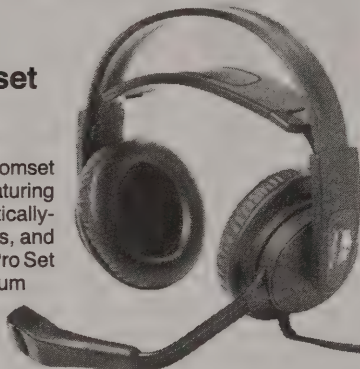
The award-winning Pro Set is the choice of top DX and contest operators worldwide. Offering a comfortable dual-earmuff design with 40 dB of outside noise rejection, The Pro Set is available with the HC-5 full-range element, the HC-4 "DX Dream Machine" element, or the "iC" element designed for Icom rigs. The Pro Set iC includes an AD-1-iC (8 pin foster) cable. **HRO Price \$139.95**



Proset Plus Dual Element Headset

(limited availability)

The Pro Set Plus is the ultimate boomset for DX and contest operators. Featuring oversized earmuffs with acoustically-tuned chambers for the speakers, and dual microphone elements, the Pro Set Plus is fully adjustable for maximum operator comfort. The Pro Set Plus is equipped with the HC-5 full-range element and the HC-4 "DX Dream Machine" element, while the Pro set Plus iC includes the HC-4 plus the full-range "iC" element designed for Icom rigs. The Pro Set Plus iC includes an AD-1-iC (8 pin foster) cable. **HRO Price \$199.95**



BAG -1 Leatherette travel bag for Pro Set and Pro-Plus.

HRO Price \$28.95

BAG -2 Leatherette travel bag for Quiet Phone, Traveler, & BM Series.

HRO Price \$22.95

Switches



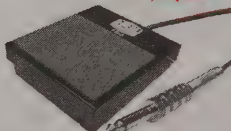
HS-2 PTT Hand Switch

Heil's high quality hand switch made for P.T.T. operation is shaped to fit your hand naturally and comfortably. Comes with a 6 foot cable that plugs into the AD-1 or CC-1 adapter. **HRO Price \$39.95**

FS-3 Single Circuit Footswitch

NEW!

Use the FS-3 to control the transmit/receive function of your amateur radio. An 8-foot shielded cable is terminated with a commercial 1/4" plug that connects into the Heil CC-1 and AD-1 cable system. **HRO Price \$25.95**



FS-2 Dual Footswitch

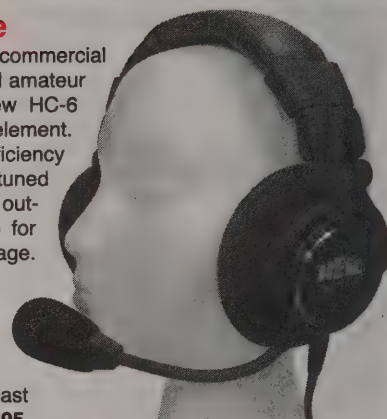
The FS-2 is a unique dual-action footswitch ideal for the modern Ham station. The FS-2 provides two sequenced micro-switches, one each for connection to your transmitter and your linear amplifier; when you press down on the footswitch, the amplifier's switch is engaged first, followed immediately by the switch for the radio, and when you let up the reverse sequencing takes place. This provides safe T/R switching for both radio and amplifier without need for a control cable between the two units. **HRO Price \$44.95**



HEADSETS

Pro Set Elite

This is the ultimate boomset for commercial sportscasters, podcasters, and amateur radio operators using the new HC-6 wide response microphone element. It features dual side, high efficiency speakers on acoustically tuned chambers for high rejection of outside noise. The unit folds up for easy transportation and storage.



There are two models:

Pro Set Elite 6 Uses HC 6 full range broadcast dynamic element for commercial broadcast applications. **HRO Price \$169.95**

Pro Set Elite iC Uses the specially designed high performance electret condenser which was designed for low mic inputs used on many Icom transceivers. Requires 5 volts DC phantom power as provided by all Icom rigs. **HRO Price \$179.95**

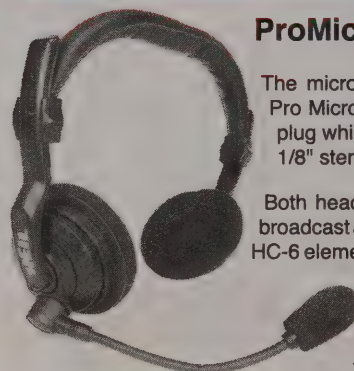
High Performance Headsets

ProMicro Headsets

NEW!

The microphone audio for the Pro Micro series terminates into a 1/8" male plug while the head phone terminates into a 1/8" stereo with adapter.

Both headsets are designed for commercial broadcast applications and are outfitted with the HC-6 element. The -3 dB points are fixed at 100 Hz and 12 kHz with sensitivity of -57 dB at 600 ohms output impedance (centered at 1 kHz).



The headphones adjust by bending the stainless steel piece that is inside the black padded headband.

Pro Micro PMD-6

Dual-sided

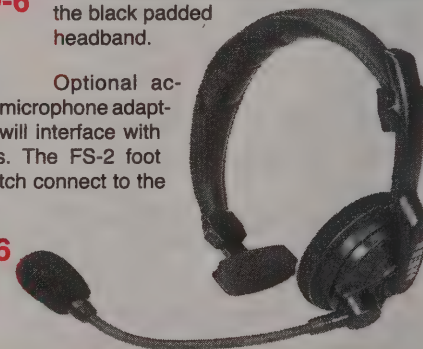
HRO Price \$99.95

Optional accessories include the AD-1 microphone adapters (sold separately) that will interface with popular transceiver inputs. The FS-2 foot switch and HS-2 hand switch connect to the PTT of the rig.

Pro Micro PMS-6

Single-sided

HRO Price \$79.95



Adapters / Cables for HTSS & HTDS

Interface Adapters:

Yaesu YM	HSTA-YM
Yaesu YM6	HSTA-YM6
Icom 706	HSTA-iM
Icom 8 pin	HSTA-i8
Kenwood 8 pin	HSTA-K8
Kenwood Modular	HSTA-KM
PC Soundcard	HSTA-PC

HRO Price \$23.95

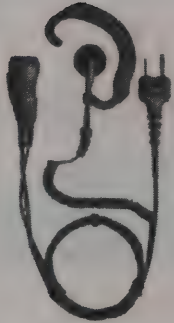
Cables for handi talkies*:

Yaesu VX except VX7	HTA-VX
Kenwood handhelds	HTA-KHT
Icom handhelds	HTA-iHT

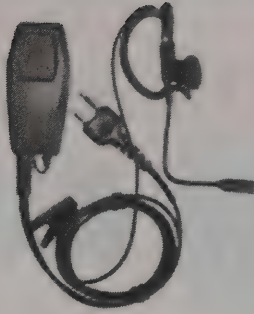
HRO Price \$23.95

*PTT works with handhelds, but UP and DOWN do not.

MICROPHONES / HEADSETS



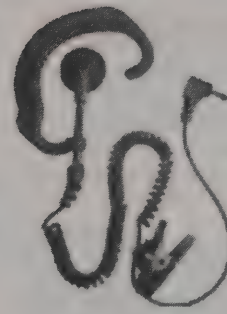
SPM-200EB



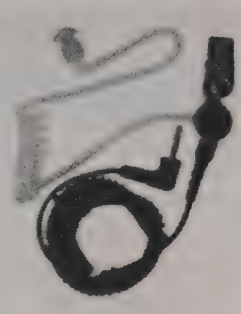
SPM-400A



SPM-100

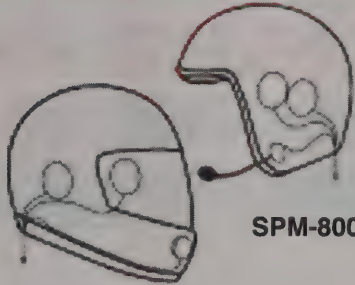


EH-100



EH-1000

PRYME®
Radio Products



SPM-800

**Speaker Microphones,
Earphones,
Lapel Microphones, and
Over-the-Ear
Boom Microphones**

24 Hour FAX Order Numbers

Anaheim	714-533-9485
Atlanta	770-263-9548
Denver	303-745-7394
New Castle	302-322-8808
Oakland	510-534-0729
Phoenix	602-395-1244
Portland	503-684-0469
Salem	603-898-1041
San Diego	858-560-1705
Sunnyvale	408-736-9499
Burbank	818-842-5283
Woodbridge	703-494-3679

Premier Communications has a Pryme product to meet any portable communication need. They offer small speaker microphones (the SPM-100 series) and full sized microphones (the SPM-900s). Users on the go will appreciate ultra comfortable lapel microphones (SPM-200 and 200E) and the patented over-the-ear boom microphones (SPM-400). For high-noise environments, use a noise resistant throat microphone (SPM-500). Users that need "low profile" communications should check out the flesh-colored "palm microphone" (SPM-700) which can easily be concealed.

Model	Description	HRO Price
SPM-100	Speaker / microphone for ADI, Icom, Standard, Yaesu	\$29.95
SPM-101	Speaker / microphone for Kenwood	\$32.95
SPM-102	Speaker microphone for FT-50R / VX-1	\$32.95
SPM-103	Speaker microphone for Motorola Radius Line	\$33.95
SPM-300EB	Lapel mic with ear hook for ADI, Icom, Yaesu, Alinco	\$40.95
SPM-301EB	Lapel microphone and ear hook for Kenwood	\$39.95
SPM-302EB	Lapel microphone with ear hook for FT-50R / VX-1	\$34.95
SPM-303EB	Lapel microphone with ear hook for Motorola Radius Line	\$41.95
SPM-400A	Earpiece/mini boom mic for ADI, Icom, Standard, Yaesu	\$39.95
SPM-401A	Earpiece with mini boom microphone for Kenwood	\$39.95
SPM-402A	Earpiece with mini boom mic w/ PPT cord FT-50R / VX-1	\$41.95
SPM-403A	Earpiece with mini boom mic w/ PPT cord Motorola Radius	\$29.95
SPM-800B	In-helmet speaker mini boom for ADI, Icom, Stanadard, Yaesu	\$70.95
SPM-801B	In-helmet speaker mini boom for Kenwood	\$70.95
SPM-802B	In-helmet speaker mini boom for FT-50R/VX-1	\$69.95
SPM-803B	In-helmet speaker / mini boom for Motorola Radius Line	\$68.00
SPM-800F	In-helmet speaker / mic for ADI, Icom, Stanadard, Yaesu	\$68.95
SPM-801F	In-helmet speaker / mic for Kenwood	\$68.95
SPM-802F	In-helmet speaker / mic for FT-50R/VX-1	\$69.95
SPM-803F	In-helmet speaker / mic for Motorola Radius Line	\$68.95
EH-169S	Earphone for speaker/mic 10" cord, 2.5mm	\$20.95
EH-169X	Earphone for Handheld radios, 22" cord, 2.5mm	\$20.95
EH-1089S	Earphone for speaker/mic 15" cord, 3.5mm	\$33.95
EH-1089X	Earphone for Most Handheld radios, 30" cord, 3.5mm	\$33.95

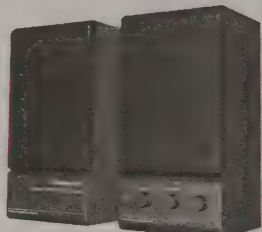
SPEAKERS

West Mountain Radio

These products contain a ClearSpeech® adaptive noise reduction digital signal processor to provide extremely effective noise reduction for voice and CW. Reduces or eliminates atmospheric noise, hum, hiss, heterodynes & static. Greatly improves the signal-to-noise ratio and thus the readability of all QSOs.

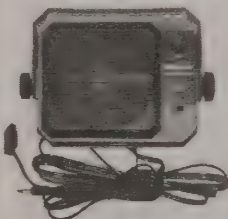
Computer Speakers for your Ham Station COMspkr

Amplified speaker system optimized for operation in close range of any radio transmitter. High rejection of RF interference, 1 to 1000 MHz. Use with computer, radio, MP3 player. Stereo high-fidelity. With audio cables, wall mount power supply. Wooden cabinet. **HRO Price \$39.95 a pair**



Noise Reduction Speaker CLRspkr

New and improved for 2011, this 4" speaker with an adaptive DSP noise reduction circuit pumps out 10 W of clear sound. ClearSpeech™ adaptive DSP algorithms analyze the noise content of the incoming signal, then greatly attenuate or completely remove hum, hiss, ignition and powerline noise, static, and heterodynes. What you hear is clean voice and CW. Noise reduction is now continuously variable. New front panel mounted volume control. The external speaker / headphone jack has been moved to the front for added convenience. Includes tilt mounting bracket, 6 foot 12 V DC power cable with Powerpole® connectors and 6 foot audio cable with 1/8" plug; On-Off Switch; Bi-color LED power / input level indicator. Dim: 5.25" w x 4.25" h x 2.5" d. **HRO Price \$219.95**



Mobile Speaker PWRspkr

Ideal for mobile use, this small powered loudspeaker is very loud, reaching over 100 dB sound pressure level. The 10-watt amplifier with volume control minimizes distortion at high sound levels. 6-pole active filtering for voice frequencies. 5.25 x 7 x 2.5 inches. 6-foot cables for 12 volts using PowerPoles and 1/8-inch audio plug. **HRO Price \$79.95**



Noise Reducing Processor CLRDsp

Outboard processor, ideal for operation in the ham shack. Processor also contains a 2 watt audio power amplifier. Metal case, 5.5 x 4.5 x 1.25 inches. Connects between your radio's speaker or headphone output and your station loudspeaker. Uses 1/8-inch audio plugs. Two 6-foot audio cables, 6-foot power cable with PowerPole connectors for 13.6 VDC. **HRO Price \$219.95**

Wall Mount Power Supply for CLRDsp, 117 Vac to 12 VDC at 1 amp. **HRO Price \$17.95**



Hear IT DSPKR
\$159.95
HRO Price



10 watts RMS Noise Cancelling DSP Speaker

- Adaptive noise cancelling 9- 24 dB.
- 7 user-selectable noise cancelling levels.
- Simple pushbutton control of DSP functions.
- Audio level indicator to optimize filter function.
- Separate volume control.
- Filter level store function.
- Sleep mode conserves battery.
- Easy to install with adjustable mounting bracket.
- 10 - 16 VDC operation.
- Auxiliary output socket for headphones or loudspeaker.
- Up to 6 watts input.
- Supplied with 1030-FPL fused DC power lead and user manual.



Noise Away
\$229.95
HRO Price

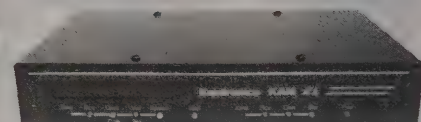
Amplified DSP Noise Cancelling Speaker

The Desk Top "Noise Away" is a stylish, robust base station speaker suitable for all bands. It is easy to set up and use via the microprocessor-controlled push buttons on the front of the speaker grill. It comes with a mounting bracket, a 1.2 meter audio cable, a fused DC power lead, and user manual.

- Matte black finish.
- Excellent audio quality.
- 4" bass driver and 1" tweeter.
- 2.5 Watt audio.
- Wide audio input level (50-500 mW).
- Power 12- 18 volts (300 mA).
- 4 or 8 selectable filter levels.
- Visual and audio indication of filter.
- Noise reduction 9 - 35 dB.
- Tone reduction 4 - 65 dB.

PACKET

Kantronics



KAM XL™

Multi-Mode DSP Controller

Kantronics' third generation multi-mode TNC is a state of the art design for operations on HF, VHF and UHF while supporting DSP modems and popular new modes of operation. The unit provides modes of Packet 300, 1200 or 9600 baud, G-TOR, Pactor 1, AMTOR ARQ, PSK31, RTTY, NAVTEX/AMTEX, ASCII, WEFAX and CW. It has a dual port mailbox and remote SYSOP access. It is GPS NMEA-0183 compatible and provides Kantronics Host Mode and KISS. **HRO Price \$419.95**



KPC-3 Plus VHF / UHF TNC

This compact, low current TNC has become the work horse of packet radio today. It features multiple packet connects, digipeating for APRS operations, WEFAX reception, a GPS mode for tracking, personal packet mailbox and more. **HRO Price \$199.95**



KPC-9612 Plus 128 Dual-Speed Dual-Port TNC

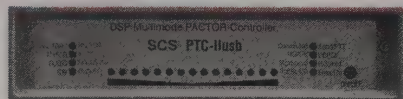
This is the rapid delivery model, supporting 9600 baud. It features both 1200 and 9600 packet ports, advanced APRS digipeating (APRS is a trademark of Bob Bruninga), (K-Net) networking, amateur beeper (paging) and more. **HRO Price \$399.95**

Keeping Up to Date . . .

The KAM '98 8.3 and KPC-3 Plus 9.1 will provide a second serial port for GPS and APRS capabilities, plus additional GPS improvements.

The KPC-9612 Plus, now sold at version 9.1, has advanced digipeating for GPS, plus the ability to download EMWIN weather broadcasts.

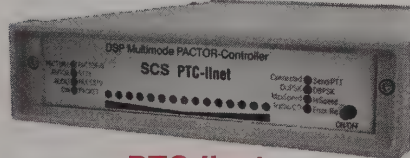
Farallon Electronics



PTC-IIusb with PACTOR III HRO Price \$1248.00

- PACTOR I, II and III standard.
- USB interface to PC, certified USB drivers.
- Standard type B connector.
- Temperature compensated crystal oscillator.
- 2 mb of internal memory.
- Motorola DSP.
- Built-in VHF / UHF packet (excludes multiport capability of PTC-IIpro).
- No transceiver frequency control for many (most) radio models.
- All PTC modems offer the same on air performance in PACTOR and Packet modes.
- Front panel: power switch, 23 LED's split into various functional groups.
- Rear panel: DIN socket for TRX audio and TRX control, raw wire connector for GPS, USB type B, 2.5 mm circular power socket.

The PTC-IIusb comes with: Installation Guide, USB cable, audio cable (connector at one end, raw wires at the other end), power connector and CD-ROM.

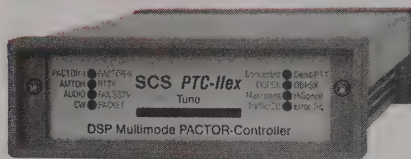


PTC-IInet with PACTOR III HRO Price \$1495.00

For Pactor IP bridge implementations or to act as a network capable device to live on your network and control a remote radio. Ethernet RJ-45 interface for connection to LAN.

- HF Internet gateway.
- PACTOR I, II and III modes standard.
- Compact.
- Low power consumption.
- Linux PC kernel.
- Ethernet 10 / 100 / 1000 port.
- Fully compatible with airmail 2000.

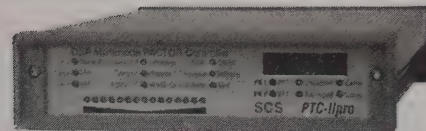
The PTC-IInet comes with: Installation Guide, USB cable, audio cable (connector at one end, raw wires at the other end), power connector and CD-ROM.



PTC-IIlex with PACTOR III HRO Price \$998.00

- PACTOR I, II and III standard.
- Serial interface: DB 9 female (AT type) 2400-115200 baud.
- Realtime clock: date & time.
- Temperature compensated crystal oscillator.
- 2 mb of internal memory.
- Motorola DSP.
- Built-in VHF / UHF packet (excludes multiport capability of PTC-IIpro).
- GPS NMEA data capable, requires # 8060 cable.
- No transceiver frequency control.
- All PTC modems offer the same on air performance in PACTOR and Packet modes.
- Front panel: 23 LED's split into various functional groups.
- Rear panel: power switch, DIN socket for transceiver connection, DB-9 serial interface (RS232), 2.5 mm circular socket for power.

The PTC-IIlex comes with: Installation Guide, serial cable, audio cables (connector at one end, raw wires at the other end), power connector and CD-ROM.



PTC-IIpro with PACTOR III HRO Price \$1448.00

- PACTOR III installed.
- Alpha numeric display.
- Transceiver control.
- 2 mb of internal memory.
- Multiport capabilities for simultaneous HF and VHF / UHF operation.
- Gateway operation HF to VHF / UHF and vice versa.

The PTC-IIpro comes with: Installation Guide, serial and audio cables (connector at one end, raw wires at the other end), power connector, and CD-ROM. Optional packet radio modules may be ordered separately.

Features of the PTC-IIusb & PTC-IIlex

- Audio input impedance: 47 kΩ.
- Audio input level: 10 mVp-p - 2 Vp-p.
- Audio output impedance: 1 kΩ.
- Audio output level: max. 3 Vp-p adjustable in 1 mV steps.
- Audio processing: Digital signal processor DSP56303 / 100 MHz, 768 kByte additional DSP RAM.
- Processor Motorola MC68360, 32 bit CMOS CPU 25 MHz.
- RAM: static 2 MByte, CMOS.
- Temperature controlled crystal oscillator (TCXO).
- Power supply: 10 - 20 V DC, 500 mA max., 260 mA nominal at 12.5 V DC.
- Protection: reverse polarity protected, self resetting fuse.

Farallon Cables and Accessories

Model	Description	HRO Price
Miscellaneous		
2330	Packet Radio DSP-2 Module	\$159.95
8040	Serial cable, male DB9 to female DB9 for modem to PC, 6'	\$15.95
8050	Packet radio cable, SCS 5pin DIN to radio side 6pin Mini-DIN, 1.5m	\$43.95
9000	Modem power cable, 6'	\$15.95
Control Cables		
8080	Modem to Kenwood or Yaesu radio, SCS 13pin DIN to DB9 female, 1.5m.	\$33.95
8081	Modem to Icom radio, SCS 13pin DIN to 3.5mm Mini Phone Plug, 6'.	\$33.95
8083	Modem to Icom or SGC radio, SCS 13pin DIN to male DB9, 5'.	\$33.95
8085	Modem to Yaesu FT847 radio, SCS 13pin DIN to DB9 female, 1.5m	\$33.95
8130	Modem to Yaesu radio, SCS 13pin DIN to 8pin Mini-DIN, 2m.	\$43.95
Audio Cables		
8120	Modem to Yaesu radio, SCS 8pin DIN to Yaesu 6pin Mini-DIN, 2m.	\$43.95
8123	Modem to Yaesu radio, SCS 8pin DIN to Yaesu 5pin DIN, 2m.	\$43.95
8125	Modem to Yaesu radio, SCS 5pin DIN to 1/8" stereo phone plug.	\$43.95
8127	Modem to Yaesu FT847 radio, SCS 5pin DIN to 1/8" stereo phone plug	\$43.95
9090	Modem to Icom radio, SCS 8pin DIN to Icom 8pin DIN, 1.5m	\$43.95
9095	Modem to Icom radio, SCS 8pin DIN to Icom 13pin DIN, 1.5m	\$43.95
9096	Modem to Kenwood radio, SCS 8pin DIN to Kenwood 13pin DIN, 1.5m	\$43.95
9097	Modem to Kenwood radio, SCS 8pin DIN to Kenwood 13pin DIN, 1.5m	\$43.95

REMOTERIG



**The Ultimate
in Remote
Control**

**Now with
Dual (Stereo)
Receiver
and
Includes
12 V Power Supply**

Remoterig

RRC-1258-MKII-S-Set

\$499.95 – HRO Price for the Set

The Remoterig RRC-1258-MKII-S-Set was developed to control Amateur Radio stations remotely via the Internet in a user friendly and cost-effective manner.

The Remoterig units are used in pairs; one is connected to the radio, and the other is connected to the control equipment. The system is unique in that no PC is needed; both voice and data communications are handled by the two units.

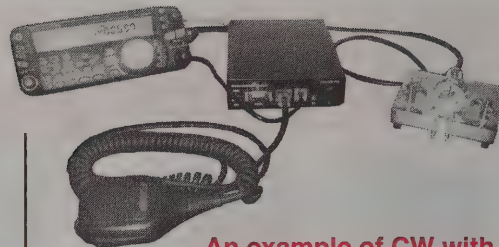
The RRC-1258-MKII-S-Set can be configured to work with almost all ham equipment currently available from Icom, Kenwood, Yaesu, and Elecraft. Remoterigs are especially useful in situations where you are (1) not allowed to install antennas at your home location, (2) the noise level is so high that a normal signal exchange is not discernible, (3) you want to build an antenna system too large for your local urban area, or (4) you do not want to be dependent upon a PC for the remote control.

The ultimate functionality of the Remoterig RRC-1258-MKII-S-Set can be experienced when the system is used with radios having detachable front panels such as the Kenwood TS-480, TS-2000, or Icom IC-706 series. Simply replace the cable between the control panel and the radio with the Remoterig system.

The system also works very well with more traditional remote control situations from PC-based control software, like Ham Radio Deluxe; the Remoterig boxes solve the voice and data problems, but you do need a PC for the control software itself in this particular setup.

The Remoterig system itself will not introduce any latencies, and those introduced by the Internet will rarely be a noticeable problem. The Remoterig system also includes a unique solution for operating CW over the Internet with, among other things, a built-in CW keyer that uses a standard 3.5 mm stereo plug.

The Remoterig RRC-1258-MKII-S-Set is connected to the Internet primarily via 10 or 100 Mbit Ethernet cable, and fixed connections like DSL, cable, or WLAN. 3G based mobile solutions will also work, although occasionally with reduced performance. The system is portable and can be used from almost any network connection in the world. Session initiation, audio (VoIP), and data are transferred using standardized protocols like SIP, RTP, etc., where you can select different audio qualities depending on available bandwidth. The Remoterig system is easily configured via modern USB and WEB based user interfaces. Stereo (dual receiver) works only with radios with dual receivers.

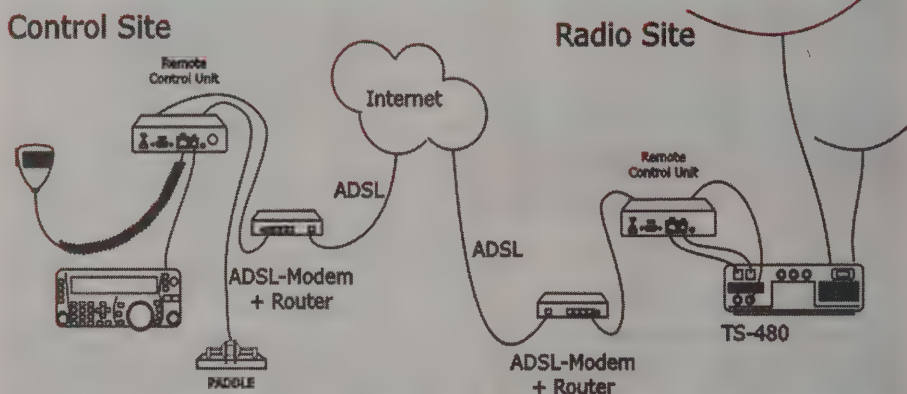


**An example of CW with
remote controlled Radio**

A CW keyer has been implemented in the RRC-1285S-MKII-S-Set software to make CW operation possible, even with longer Internet latencies and jitter. During normal operation we depend on the radio's sidetone for CW, so the problem of Internet latency is solved by the sidetone being generated locally in the Remoterig box. Remoterig automatically mutes the sidetone generated by the radio for x number of ms after the dot or dash is sent; the delay can be adjusted depending on the latency.

The CW-handler is a kind of adjustable "jitterbuffer" for the CW keyer at the radio end. If the latency of your Internet connection is not constant, the delay (in ms) can be set before the radio is keyed. The CW keyer reconstructs the transmission on the fly before it is sent; a system that is much more tolerant of varying latencies (jitter). Lengthier delay settings may provide higher tolerance against jitter, but will also effectively delay the transmitted CW signal.

Example: Remote control of Kenwood TS-480



As an example, the diagram shows a TS-480 in use with the RRC-1258-MKII-S-Set. Any of the available radios with detachable front panels, like the IC-703, IC-706, and TS-2000, will be configured in the same manner. The cable between the front panel and the radio is replaced with two RRC-1258-MKII-S-Set; one connected

to the control panel, and one connected to the radio itself. No PC is necessary in this case.

When the power button is pressed, the radio on the remote side will start up, and all audio and information from the panel travels via the Internet between the pair of RRC-1258-MKII-S-Set units

– a very similar situation to SIP-based IP telephones. All appearances and functions will be as if the front panel and radio were directly connected. Presently, the TS-480 is the simplest to adapt since no special cables are necessary, although connection cables can be made easily using RJ-45 and RJ-11 cables.

RADIO CONTROL SOFTWARE

Timewave Technology

HamLinkUSB™ USB Rig Controller Plus

HRO Price \$59.95



**Connect and control transceiver
via USB with Plus option
for T-R switch, key,
footswitch input, or user I/O**

The HamLinkUSB™ Rig Controller Plus is a USB to logic level conversion device for CAT / CI-V enabled transceivers that provides PTT output, keying output, or foot switch input options.

The CAT / CI-V feature provides a logic level serial interface which connects directly with non-RS-232 CAT / CI-V inputs on Kenwood, Icom, Yaesu, Ten-Tec, Elecraft and Alinco models.

The controller is compatible with most soundcard and software control programs such as PK-Term 3.0.

HamLinkUSB Optional Cable Assemblies

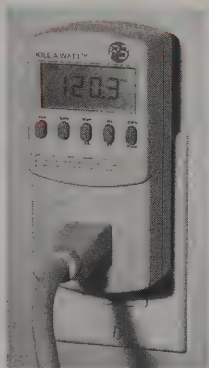
HLUSB-CIV CI-V - Icom, Ten-Tec, Elecraft.
HRO Price \$8.95

HLUSB-CAT MiniDIN-8 cable assembly
for Yaesu FT-857 / 817, 100 / 100D
HRO Price \$13.95

HLUSB-4CON 4 conductor with 3.5 mm plug
to open end cable.
HRO Price \$13.95

Kilowatt Monitor

Kill-A-Watt



Connect equipment into the Kill-A-Watt™ to assess its efficiency. A large LCD display counts consumption by the kilowatt hour just like utility companies. You can figure out your electrical expenses by the hour, day, week month, even an entire year. Monitor the quality of your power by displaying voltage, line frequency, and power factor.

Specifications: Operating Voltage: 115VAC. Maximum Voltage: 125 VAC. Maximum Current: 15A. Maximum Power: 1875 VA. **HRO Price \$24.95**

RT Systems

*Discover how easy programming your radio can be.
It's soooo easy!*

Radio V4 Programming Kits

HRO Price \$49.00

Radio V4 Programming Kits include CD-ROM software and NEW RT System's USB cable interface. All cables are radio tested and guaranteed to work!

Software features:

- Spreadsheet design.
- Insert or delete channel information without re-entering the entire list.
- Changes made with point and click options. Many settings are completed automatically.
- Open several files at once to copy / paste between them – even files for different radios.
- Multi-row copy / paste (all data or a single column).
- Sort on any field; edit data; then un-sort to original order.
- Direct link to ARRL TravelPlus.
- Find and Go-To.
- Print.

For Windows 2000, XP, 7 and Vista (32 or 64 bit). Local CD drive and USB port are required.

Some important points to consider:

- You have the ability to copy and paste from any RT Systems V4 Programmer. There is no need to re-enter details.
- Setup the Item Menu options only once. The Programmer remembers these when you start a new frequency file for that radio.
- Read the current configuration from the radio. Save it for editing or just for the record.
- The software is organized. Options that can be set only once are presented only once. If you see it on the screen, you will see it the same way at the same spot on the radio.
- The USB cables are available separately. The cables are comparable to those from Kenwood addressing other functions as well as programming.

Icom Radios

Model	Radio Models	Includes
WCS-R2	IC-R2	Software / USB 29A Cable
WCS-T2	IC-T2	Software / USB 29A Cable
WCS-Q7	IC-Q7A	Software / USB 29A Cable
WCS-T7	IC-T7	Software / USB 29A Cable
WCS-T8	IC-T8	Software / USB 29A Cable
WCS-R10	IC-R10	Software / USB 29A Cable
WCS-W32	IC-W32	Software / USB 29A Cable
WCS-T70	IC-T70	Software / USB 29A Cable
WCS-80	IC-80	Software / USB 29A Cable
WCS-V80	IC-V80	Software / USB 29A Cable
WCS-T81	IC-T81	Software / USB 29A Cable
WCS-V85	IC-V85	Software / USB 29A Cable
WCS-T90	IC-T90	Software / USB 29A Cable
WCS-91	IC-91	Software / USB 29A Cable
WCS-92+	IC-92	Software / USB 29A Cable
WCS-208	IC-208	Software / USB 29A Cable
WCS-D800	IC-800	Software / USB 29A Cable
WCS-D880	ID-880	Software / USB 29A Cable
WCS-2100	IC-2100	Software / USB 29A Cable
WCS-2200	IC-2200	Software / USB 29A Cable
WCS-2720	IC-2720	Software / USB 29A Cable
WCS-2820	IC-2820	Software / USB 29A Cable
WCS-7000	IC-7000	Software / USB 29A Cable
WCS-V8000	IC-V8000	Software / USB 29A Cable

Kenwood Radios

Model	Radio Models	Includes
KRS-K2	TH-K2	Software / USB K4Y Cable
KRS-F6/F7	TH-F6/F7	Software / USB K4Y Cable
KRD-D72	TH-D72	Software only-use radio cable
KRS-271	TM-271	Software / USB K5D Cable
KRS-D710	TM-D710	Software / USB K5D Cable
KRS-V71	TM-V71	Software / USB K5D Cable

All RT Systems Programmer Cables

RTS-03

RTS-03 USB to serial adapters. True RS-232. Works well with most any serial interface including serial programming cables.
HRO Price \$22.95

**Visit our secure website to check the latest prices
and special offers from manufacturers.**

<http://www.hamradio.com>

A RIGblaster is the easiest way to connect your radio or radios to your computer to operate PSK31, SSTV, RTTY, Echolink, Packet, APRS, CW, DVK, WSJT, and more with more than 100 third party Amateur Radio sound card programs. All RIGblasters are ground isolated and RF filtered. Supplied with all the cables you need to get on the air including a USB cable, CDROM, and instructions. These models work with more than 2000 radio models having either an 8-pin round or RJ45 square microphone jack and with any computer that has sound. Kits are available for 4-pin round or RJ22 square connectors.



RIGblaster Duo

RB/DU/CUSB All the best features of a RIGblaster but for two radios. Monitor and control the receive audio of two transceivers and computer audio almost any way possible. With only one microphone, one set of speakers, one pair of headphones, and one computer, you will be able to operate with two radios. Use your best microphone even if the radios are different brands.

Dual USB to serial interface, dual rig control (CAT / CI-V), dual CW keying, dual FSK keying gives you the maximum flexibility. Two complete 3-watt stereo amplifiers work with almost any speakers or headphones. Real toggle switches and knobs for transmit select and monitor with a full set of LED status indicators plus radio mounted LED transmit-ready indicators.

Compatible with most radios, microphones, speakers, headphones, and all computers with USB and sound using any one of more than 100 compatible third party software programs.

Requires power from your station's 12-volt DC supply. Comes with the cables needed to get on the air, a CD-ROM and instructions. **HRO Price \$349.95**

PS/DOU Power Supply: 12 volt regulated 2-ampere power supply. **HRO Price \$19.95**

M8/CBL/6: 6-foot microphone cable, 8 pin round to RJ45. **HRO Price \$22.95**

RJ/CBL/6: 6-foot microphone cable, RJ45 to RJ45. **HRO Price \$13.95**

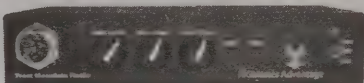
RIGblaster Nomic

RB/NO/CUSB All sound card modes. No microphone switching. No power needed. USB and serial cables included. Great for Echolink, portable, and temporary setups. **HRO Price \$59.95**

Accessories for all RIGblasters

Yaesu FT100/CBL 6-pin microphone conversion cable. **HRO Price \$18.95**

4T8 / Kit 4-pin microphone conversion two-cable kit. **HRO Price \$24.95**



RIGblaster Advantage

NEW!

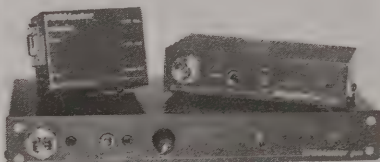
Here is the first RIGblaster with an internal soundcard. It works with all manufacturer's radios using only one USB cable to connect to PC and power. Built-in CAT or CI-V rig-control interface. RS232 radio control interface through DB9 port. Mic input with PTT override and interrupt, for 8-pin and RJ-45 radios as supplied. Front panel transmit and receive audio and VOX delay controls. Fully isolated CW / FSK output for keyboard CW and RTTY software. Comes with one 8-pin round mic cable, one RJ-45 mic cable, mic configuration Instant Set Up connectors, USB cable, and audio cable. **HRO Price \$199.95**

RIGblaster Advantage Accessories:

Rig Control Cable for CI-V Radios **HRO Price \$9.95**

Rig Control Cable for CAT Radios **HRO Price \$13.95**

CW cable kit **HRO Price \$9.95**



RIGblaster Pro

RB/PR/CUSB Does everything you can possibly do with a computer and a radio: all sound card modes, microphone equalization, record QSO's, rig control, direct CW and FSK. Auto microphone switching. Wall mount power supply, USB cable, and microphone jumper blocks for most radios included. A must for the serious contestator / logger. **HRO Price \$299.95**

RIGblaster Plus II

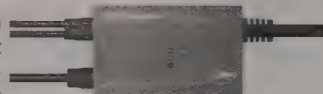
RB/PL2/CUSB All sound card modes, Plug and Play USB port for connection to PC and power, Instant Set-up Connectors for mic config., front panel TX power level knob and CAT/CI-V control interface. Includes USB cable, microphone jumper blocks for most radios, audio cables and CD with free soundcard software. Easy to hook up and use. **HRO Price \$159.95**

RIGblaster P&P

Plug & Play USB, Data Jack sound card interface

Other RIGblasters work with more than 2000 different radios through their microphone connector. Check whether your radio has a data jack that allows operation on all bands and modes while supporting proper microphone operation. If so, the RIGblaster P&P may be your best choice.

Simple USB "Plug and Play" installation: one plug to the radio, USB, and sound for the computer. Built-in USB to serial converter for PTT, CW, and CAT or CI-V rig control. Compatible with more than 100 amateur radio sound card programs and more than 25 modes, unlike other USB sound card interfaces.



FEATURES: USB powered, no external power supply. Compact—great for portable or QRP operation. Built in TTL CAT or CI-V rig control. CW keying. Isolated audio and keying unlike other USB interfaces. LED indicators for USB, PTT keying, and CW keying status.

SUPPLIED WITH: Radio specific 8' data jack adapter cable. 12" computer audio and USB cables. CD-ROM with USB Plug and Play installation, owner's manual, ham radio sound card software collection.

Plug and Play RIGblasters

Model Number	Description	HRO Price
RB/PP/8D	Icom 8 pin DIN ACC1	\$119.95
RB/PP/13D	Icom 13 pin DIN	\$119.95
RB/PP/YK6MD	Yaesu, Icom, Kenwood mini 6 pin DIN	\$99.95
RB/PP/K13D	Kenwood ACC2 13 pin DIN	\$119.95

Accessory Cables

Model Number	Description	HRO Price
PP/CW/CBL	CW cable 1/8" mini phone with 1/8-1/4" adaptor	\$9.95
CIV/CBL	Icom CI-V cable 1/8" mini stereo to 1/8" mono	\$9.95
CAT/MINI/CBL	Yaesu CAT 8 pin mini DIN cable	\$13.95
CAT/6D/CBL	Yaesu CAT 6 pin DIN cable	\$13.95



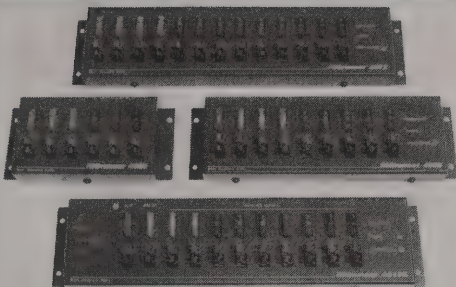
RIGtalk USB Rig Control Interface

CI-V Icom, Ten Tec or Elecraft, Yaesu TTL CAT mini or standard DIN jack. Windows plug and play serial to TTL level converter. CD ROM with plug and play drivers, third party rig control software collection, and operator's manual. Order packaged with pre-wired radio cable:

RT1 / CIV RIGtalk w/ cable for Icom & Ten-Tec CI-V Radios. HRO Price \$56.95

RT1 / CAT RIGtalk w/ cable for Yaesu FT-100, 100D, 817, 857, 897. HRO Price \$61.95

RT1 / CAT6 RIGtalk w/ cable for Yaesu FT-736, 747, 767, 980, 990, 1000, 1000D. HRO Price \$64.95



RIGrunners

Power panels are the most convenient and safest way to connect all your 12 volt equipment. Uses Anderson Powerpoles, the ARES, RACES, RSGB standard; polarized and color keyed. Any outlet 40 amps maximum, 40 Amps total (8012 is 80 Amps total). Outlets fused with assorted ATC / ATO automotive fuses. Blown fuse LED indicators. For home and mobile installations. 6-foot input cable #10 AWG with 1/4-inch ring terminals (#8 wire for 8012).

RIGrunner 8012C

RR/8012C Provides distribution of up to 80 amperes from two fused 40 amp busses, each with 6 fused outputs. Integral heavy duty input cable is 6-foot long #8 wire. Connect the 1/4-inch ring terminals to your power supply. Quick status precision LED, high, normal, and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price \$159.95**

RIGrunner 4010

RR/4010S/C 10 outlets. One outlet is "always on"; nine are auto or manually switched outlets. FET on/off system controls switched outlet so you can turn on the entire station with the power button on your rig. Quick status precision LED, high normal, and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price \$139.95**

RIGrunner 4012

RR/4012C 12 outlets. Quick status precision LED, high normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price \$129.95**

RIGrunner 4008

RR/4008C 8 outlets. Quick status precision LED, high normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price \$119.95**

RIGrunner 4008H

R/4008H/C 8 outlets. Connectors on the side. Perfect for home or mobile installs, or as expansion unit. 12 pair Powerpole sets. **HRO Price \$109.95**

RIGrunner 4005

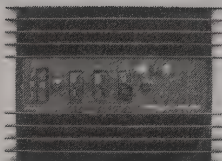
RR/4005C 5 outlets. Perfect for small or mobile installs, or as expansion unit. 6-foot input cable #10 AWG with 1/4-inch ring terminals. 6 pair Powerpole sets. **HRO Price \$84.95**

RIGrunner 4005H

R/4005H/C 5 outlets. Connectors on the side. Perfect for small or mobile installs, or as expansion unit. 6 pair Powerpole sets. **HRO Price \$84.95**

RIGrunner 4004U

RR/4004U/C 4 12-volt outlets and 2 USB outlets to power or charge PDAs, MP3 players, and other USB chargeable units. Perfect for small or mobile installs, or as expansion unit. 6 pair Powerpole sets. **HRO Price \$95.95**



PWRgates

PG-40S - Super-PWRgate Backup power for the ham shack, repeater, or emergency communications center.

Equipment is instantly switched between 13.8V DC supply and battery during power failure and restoration. Handles 40 Amps. Built-in four-stage battery charger. Selectable 1, 4, 6, and 10A rate. Fast charges the battery after a power outage, peak charges, then float charges. Keeps batteries "always fresh." When connected to a power supply the PG40S may be used as a battery charger only. Powerpole connectors. **HRO Price \$139.95**

PWRguard

Protect the radio, the power supply and the battery from damage. PWRguard is an automatic safety switch that is inserted between a power source and the load. It switches OFF whenever the voltage is over 15 volts or under 11.0 volts average. It handles up to 40 amps, uses an FET - no relays - to switch. PWRguard is ideal for use with a PWRgate and a radio. If your power supply loses regulation and goes high, PWRguard turns OFF. If the voltage drops down below 15 volts again, the PWRguard automatically turns back ON. PWRguard protects a battery from over discharge by sensing the AVERAGE voltage under load. Latches off for low battery, and resets automatically if the battery is re-charged. **HRO Price \$69.95**

PWRbrite LED Light Strip

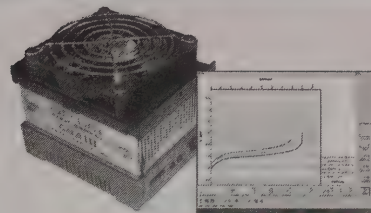
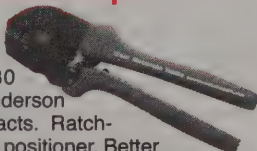
Low current, bright, natural light. Self-adhesive snap-in mounting clips. Less than 100 ma gives 97 lumens. Unlike other LED strips, the PWRbrite provides bright, flicker free light over the voltage range of 11 to 26 volts even when operating a transmitter from the same battery or power supply. 6 foot power cord. On-off switch. Perfect for shacks, mobile, camping, QRP battery QSOing. **HRO Price \$39.95**

CW Switch

Use the single toggle switch to enable a rig's CW paddle and keyers to be swapped between two radios. No need to wire keys in parallel or move cables. Duo model to use with RIGblaster Duo (includes duo power and control cable). Stand-alone for use with other rig configurations (includes 12V DC power cable). **HRO Price \$59.95**

PWRcrimp

A high performance tool for crimping 15, 30 and 45 Amp Anderson Powerpole contacts. Ratcheted with contact positioner. Better than soldering. Easy to use. **HRO Price \$39.95**



CBA III Computerized Battery Analyzer

Test any battery type, size and chemistry up to 55 volts maximum. High accuracy, microprocessor-controlled tester plugs into any Windows® PC's USB port. Microsoft certified for XP, Vista 32/64. Performs a constant current discharge and plots a graph of voltage vs. ampere hours to show battery capacity. Accurately tests small batteries as low as 100 mA, large batteries at up to 40 amperes or 100 watts, whichever is higher. Upgradeable user-friendly software is easy to install, set up, and run. Save and print graphs. Print data and performance labels for your batteries. Ideal for anyone relying on rechargeable battery power. 6 ft USB cable, CD, Powerpole connectors. **HRO Price \$149.95**

Magnetic Temperature Probe: Measures battery temperature during high current CBA test. Turns off test if over temperature. **HRO Price \$11.95**

CBA 10X Amplifier

Connects to the output of a CBA II and multiplies the current by a factor of 10. Tests at up to 160 Amperes or 500 Watts, whichever is higher. 5/16 inch bronze studs for the battery connection. Special version software is provided. **HRO Price \$729.95**

PWRcheck

NEW!



PWRcheck - an integrated DC power analyzer, watt meter and electricity monitor. Save

money by properly assessing your rig's power supply and backup battery load. Measures 0 V to 60 V, up to 40 A continuous duty. 13 display modes including amp-hours and voltage quality. Programmable alarms. High side monitoring simplifies installation - suitable for vehicle use. Stores 174,000 points for historical data logging, more than 4 months worth. Included PC software supports real-time monitoring, data download and charting. 40 A Powerpole® connectors for source and load; backlit graphics LCD. **HRO Price \$125.95**

ISOpower

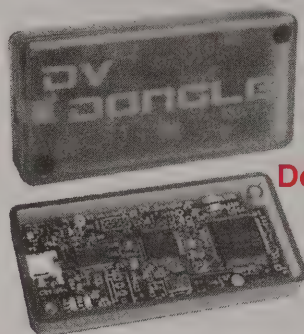
ISOpower connects an auxiliary battery to a vehicle's battery system. Equipment powered from the auxiliary battery never drains the vehicle's battery. Whenever the car's engine is running the auxiliary battery is being charged. Whenever the engine is not running, the auxiliary battery is disconnected from the vehicle's battery. Uses a solid-state high-power FET for the automatic switch. ATC fused at 40 amperes. Powerpole connectors for input, auxiliary battery, and load. **HRO Price \$79.95**

DIGITAL SOUND

D-Star Audio

Works with PCs and Macs

INET Labs



DV Dongle

The DV Dongle connects to your PC or Apple Mac via a USB port and provides encoding and decoding of compressed audio using the DVS1 AMBE2000 full duplex vocoder DSP chip.

AMBE technology is used in all D-Star radios to provide efficient voice transmissions. It is also used in some HF digital protocols by vendors like AOR.

The DVTool application used with the DV Dongle may be installed and run on Microsoft XP/Vista, Mac OS Leopard or many flavors of Linux. The unit includes a USB A to mini-N cable. PC and Mac users must download an FTDI USB device driver. **HRO Price \$199.95**

DV Access Point Dongle

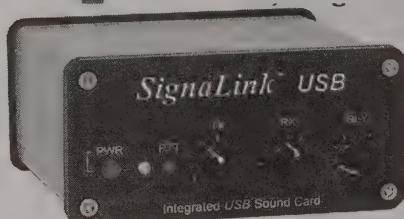


The DV Access Point Dongle (DVAP) provides a way to connect to the international D-Star network. The DVAP is used with a PC or Mac and an internet connection.

You can walk away from the computer and transmit / receive D-Star voice and data using a 2 meter D-Star radio. It uses the computer's USB port and a PC running Windows XP / Vista / 7 / Linux or an Intel Mac running OS X. The DVAP is a GMSK modem with a 2 meter transceiver built in.

The DVAP tunes between 144 and 148 MHz for IARU regions 2 and 3 and 144 to 146 for region 1. **HRO Price \$249.95**

Tigertronics™



SignalLink™ USB
Integrated USB Sound Card

SignalLink™ USB combines the legendary performance of our SL-1+ with a state of the art "built-in" low-noise USB sound card. The unit delivers optimum performance while eliminating the need to attach to your computer's existing sound card. Convenient front panel controls and simplified installation make this one of the most user-friendly interfaces on the market.

ALL sound card Digital and voice modes are supported by the SignalLink™ USB including traditional modes such as RTTY, SSTV, CW, PSK31, MT-63 and EchoLink®. Performance on all modes has been optimized by the use of special low-noise parts and careful design techniques. Front panel controls let you adjust your transmit audio, receive audio and transmit delay "on the fly."

The SignalLink™ USB works with ALL radios and can be attached to the mic jack, data port or accessory port. (see table below) A wide selection of fully assembled radio cables are available for common base and mobile radios. A special unterminated radio cable is available for handhelds and radios that use a non-standard connector.

The SignalLink™ USB comes fully assembled and tested. No external power required; power is from the USB port. The unit comes with a USB cable. Specify which cable is to be included by using the table below. Also included: mono cable, jumper wires, allen wrench, software CD, documentation. Supports Windows, Mac OS9.1 or later and Linux. FCC certified to comply for a Class B digital device. Unit prices including the radio cable are shown in the table below.

Microphone Connectors

SLUSB4R	For 4-pin round mic connector
SLUSB8R	For 8-pin round mic connector
SLUSB RJ1	For RJ-11 mic connector
SLUSB RJ4	For RJ-45 mic connector

HRO Price \$109.95 each

Accessory Port Connectors

SLUSB5PD	For 5-pin DIN data / accessory port
SLUSB8PD	For 8-pin DIN data / accessory port
SLUSB6PM	For 6-pin mini DIN data / acces.port

HRO Price \$109.95 each

SLUSB13I	For Icom 13-pin DIN accessory port
SLUSB13K	For Kenwood 13-pin DIN acces. port

HRO Price \$109.95 each

W4PC
SOFTWARE



**Digital Desktop
Sound Card**
for Icom 7200 / 7600

HRO price CALL
includes USB cable

No need for a soundcard interface! They are built in to the radio, so all you need is a USB cable (included) and free USB port on your computer. Includes the soundcard modes of RTTY, MT-63, PSK-31, SSTV, built-in logbook for logging, macros. All the features of the Digital Desktop for Kantronics / Timewave with just the soundcard modes!

Emergency Lights

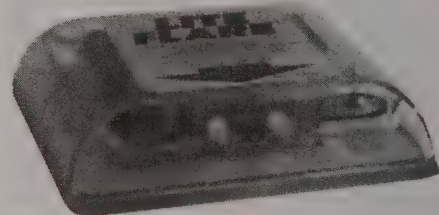
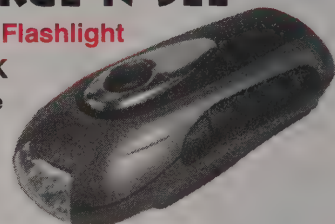
EMERGE-N-SEE

Windup Flashlight

FS-01BK

HRO Price

\$9.95



LiteFlare

Emergency Flasher LF-01

LiteFlare is an economical alternative to the road flare. Unlike single-use disposable incendiary flares, each reusable Lite Flare operates for more than 400 hours. One LiteFlare replaces more than 750 (30 minute) incendiary flares. Just insert two fresh "AA" batteries.

The Lite Flare operating mechanism is enclosed inside a rugged military-grade, high impact plastic case that resists water, snow, dust, rough pavement—even the weight of an automobile. LiteFlare is safe to use and won't ignite fuel or clothing. LiteFlares produce no toxic residue or fumes to harm the environment or the user.

Lite Flare's flashing red light is visible for more than two miles during darkness! It can also be used during foggy or heavy overcast daytime conditions or stormy weather. To operate, just flip the switch and the LiteFlare begins flashing. **HRO Price \$14.99**

ACCESSORIES

EQUIPMENT MOUNTS

Aids for Icom and Yaesu Transceivers

Better RF

706 Tune Control

For Icom IC-706 or 706 MkII

Tune control consists of a small OPC board that plugs into the Molex connector on the back of your radio and makes the "Tuner/Call" button operational. Push once and the transceiver emits 10 watts, steady carrier and sidetone through the speaker (internal or external). Use the signal to tune your antenna, an antenna tuner, or to check your SWR. Press twice more and the transceiver reverts to the previous mode and power. Works 160 through 10 meters. **Suggested List \$32.95**

7000 Tune Control

For Icom IC-7000

- Makes the TUNE /CALL button functional.
- Displays SWR as you tune an antenna or external tuner.
- Constant 30 watts or pulsed output at normal power.
- Senses voltage on a screwdriver antenna motor.

Suggested List \$64.95

7000 Screwdriver Control

For Icom IC-7000



Control any screwdriver antenna from your Icom 7000 radio. A 7000 Tune Control unit is required. The Screwdriver Control finds antenna resonance with the push of the TUNE button on the radio. SWR visible on the IC-7000 during the tuning process. No modifications required to the radio or antenna. **Suggested List \$99.95**

Yaesu Tune Control

For Yaesu

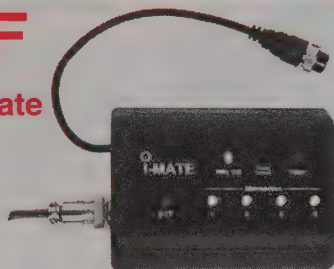
FT-100, FT-857 or FT-897

Make the TUNE button function on your radio provide a low power output for

tuning, adjusting antennas, checking SWR, no matter what mode you are using. Interface cable included. Provides an interface between your Yaesu transceiver and Icom type accessories. **Suggested List \$44.95**



I-Mate



For Icom Rigs IC-746-Pro or IC-756-Pro II

The I-Mate allows the external selection of pre-recorded voice and keyed messages for the IC-756PROII and keyed messages for the IC-746PRO. It eliminates the necessity to shift the display from an operating mode to a memory select mode simply to transmit the pre-recorded messages.

Pressing one of four buttons on the I-Mate transmits the message associated with that button. It provides a pulsed sine-wave oscillator for tuning of high powered amplifiers and antenna tuners.

The I-Mate plugs directly into a transceiver's microphone jack and receives its power from the transceiver. **Suggested List \$84.95**

Interface for Yaesu HF



IF-2000 IF Interface

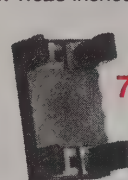
The IF-2000 IF interface board adds an IF output to the Yaesu FT-2000 and FT-950. This board allows the interfacing of the transceiver to an RFSPACE Software Defined Receiver or panoramic adapter. The addition of an SDR to the Yaesu radios greatly enhances its capabilities. Here are some of the key enhancements of the RFSPACE SDR-IQ / IF-2000 board:

- Adds the most powerful panoramic adapter available for the Yaesu radios. Experience unprecedented speed, bandwidth and resolution.
- Adds a 190 KHz wide waterfall / spectrum display.
- Adds two additional AM / FM / CW / SSB demodulators.
- Allows the recording of 190 KHz of band to the computer hard drive centered at the radio VFO frequency.
- Allows the monitoring of HF and 6 meter frequencies.
- Adds the ability to monitor the transmitter spectrum.

GPS, Radio & Phone Mounts

Portagrip

Portagrip's collection of holders for cellular phones, GPS units and radios will make your mobile operations easier and safer. Standard foot size: 2.5 x 2.5 inches. For tight quarters, use the small foot: 2 x 1.625 inches.



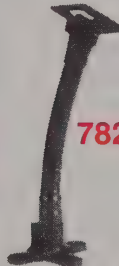
701



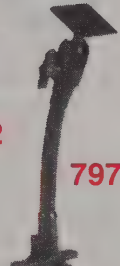
702

Portagrip Holders: Holds most phones from 1.6" to 2.6" wide. Includes models **701**, 706 Portagrip / Slim-line with set screw adjustment, 707 Porta-grip / Slimline with knob adjustment.

Portagrip 2000: Holders adjustable both in width and length. Includes models **702** for narrow phones, 703 for phones up to 2.25" and 704 for flip-style phones.



782



797

Stay-put Flex Mount: Includes model **782**.

Uniflex Mount: Includes model **797** with knob adjustment under mounting plate.

Standard Mounts: Split ball base with 90 degree tilt movement. Includes models 320 std mount w/6" rise, **322** deluxe mount w/6" rise, 328 mount base only accommodates 5/8" diameter post tilts 0 to 90 degrees, 329 base only accommodates 5/8" diameter post and tilts to 45 degrees over center.



322



716

Slimline 2000 Pedestal Mounts: Pivot 210 degrees and rotate 360 degrees, 6" or 9" heights. Includes model **716** w/set screw adjustment at head and foot, 717 knob adjustment at head and foot.



727

Mini Mount: Perfect for tight installations, height only 4". Includes models 77-04 set screw adjustment at head and **727-04** knob adjustment at head.

EQUIPMENT MOUNTS

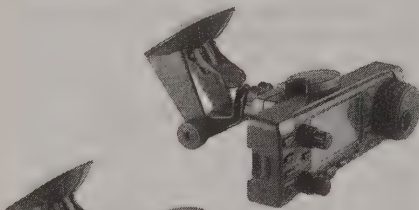


Radios are NOT included. They are shown for illustration purposes only.



**Motorcycle Mount
for Radio Remote Heads
LM-1100**

Mount this ball and socket design on handlebars or tubing up to 1 inch in diameter. The mount is made of powder coated marine grade aluminum so it will hold up in just about any weather conditions. Lifetime warranty. **HRO Price \$24.95.**

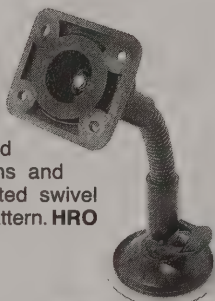


**Low Vibration Mount
LM-500H**

With two directional adjusting knobs and a unique telescoping shaft, this radio mount is ideal for your mobile rig, XM, Sirius, or other portable satellite radio receiver. A circular black adhesive disc is also included with the mount and easily converts the super strong windshield suction cup on the pedestal into a reliable console mount. **HRO Price \$24.95.**

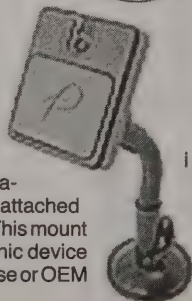
**WindowMate
LM-400**

The WindowMate is a premium suction mount for windshield or glass applications and features an integrated swivel with an AMPS hole pattern. **HRO Price \$14.95.**



**WindowMate Express
LM-400EXP**

The WindowMate Express is a version of the original Window-Mate and features an Express Mount attached to the integrated swivel. This mount is perfect for any electronic device using a button, leather case or OEM clip **HRO Price \$19.95.**



**UltiMount
LM-700**

The UltiMount installs in seconds and can be swiveled, rotated and adjusted to virtually any position. Secured with a flexible pad that has 3M automotive adhesive on the back, the UltiMount can be removed without leaving any residue. **HRO Price \$24.95**



**Cup Holder Mount
LM-801EXP**

The Cup Holder mount works for either an HT or a remote radio head. A flywheel control on the top of the base allows the user to adjust the mount to just about any size cup holder. The mount stands 5 1/2 inches tall can be installed or removed in seconds. **HRO Price \$24.95.**



**LoBoy Mount
LM-600**

A universal, low profile mount for securing hands free cradles, XM and Sirius satellite radios, TFT displays and more. The LoBoy features an integrated swivel which allows easy adjustment in any direction, holding securely without locking or tightening levers. The flexible mounting pad with its 3M adhesive back makes installations fast, simple and strong. **HRO Price \$14.95.**



NEW!

**Adapter for
Yaesu FTM-350
LM-AD1**

(radio remote head not included)

Adapter kit for the FTM-350 remote display head and similar (including Icom) that use the camera style threaded socket to hold the display head to the mount. The kit is sold separately and attaches to all the Lido Mounts. **HRO Price \$8.95.**



**Floor Mount
LM-300**

The mount has a 15" Gooseneck Swivel Mounting Pedestal, this allows you to place our device in the perfect position for optimal viewing. Just loosen the passenger seat bolt, slide the mount bracket under the bolt, tighten the bolt. The mount comes with a 4 hole amps plate to mount remote heads. **HRO Price \$24.95**

**The BUG Mount
LM-900**

shown with optional radio



The BUG is a mount for securing small, narrow profile radio control heads for Satellite radios, (both XM and Sirius); VHF radios, HAM radios and more. **HRO Price \$19.95**

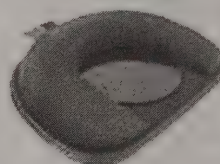
**Vent Mount
LM-100**

The vent mount has a 4 hole amps pattern that can be attached to Alinco, Icom, Kenwood and Yaesu remote head brackets. Swivel 360 degrees for optimal viewing. The vent mount can be installed or removed in seconds. Fits most horizontal vent louvers. It does not work on the large circular vents like those found in Mustangs and PT Cruisers. **HRO Price \$14.95**



**Vent Mount w/
Side Grip Holder
LM-100H**

The vent mount includes a side grip holder for some Kenwood and Icom remote heads. The grip has padded arms and can handle devices from 1 7/8 inches to 4 1/4 inches in height. Easily remove your device to store out of sight when you reach your destination. For use with horizontal air vent louvers. **HRO Price \$24.95.**



**Bean Bag Dash Mount
LM-25**

The bean bag includes a safety loop and a plastic hook to insure the stability of the weighted friction dash mount. The open design in the front of the mount allows for viewing your entire GPS. **HRO Price \$19.95.**

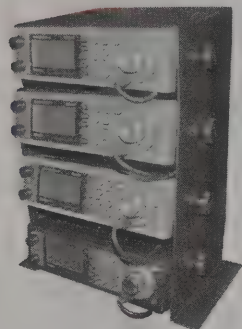


**Bean Bag Dash / Windshield Mount w/ Side Grip Holder
LM-2500H**

The bean bag mount weighs 2 pounds and has a non-skid surface on one side. On the other side is a plate designed for the LM-500 mount suction cup to attach to. The Gripomatic side grip holder has padded arms that hold your transceiver. **HRO Price \$39.95.**

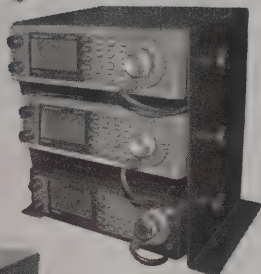
Desk Mounts

(Radios not included)



Desk mount for 4 base scanners.
HRO Price \$79.95

Desk mount for three base scanners.
HRO Price \$69.95

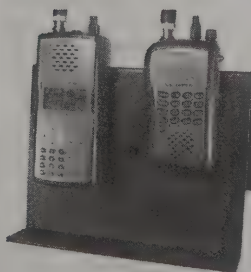


Desk mount for two base scanners.
HRO Price \$59.95

Desk mount for three portable scanners.
HRO Price \$59.95



Desk mount for two portable scanners.
HRO Price \$49.95

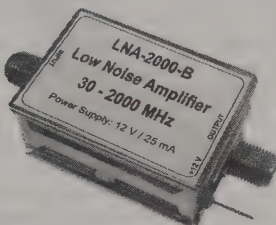
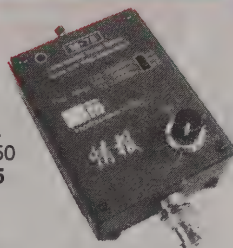


Desk mount for one portable scanner.
HRO Price \$39.95



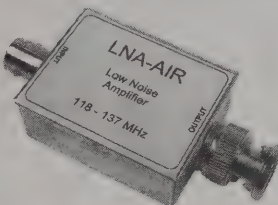
Pre-Amps

Jim M75 Pre-Amplifier has variable gain control and band pass filters to minimise interference. Range: 24MHz to 2150 Mhz. HRO Price: \$199.95



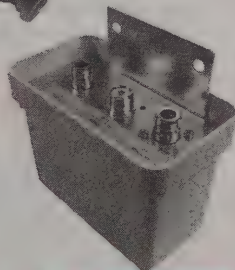
Low noise preamp (LNA-2000-B) for 30-2000 MHz, F connectors, VDC 11-13V (not supplied). HRO Price \$79.95

Low noise AIR preamp (LNA-AIR) for 118-137 MHz, 20 dB gain, BNC connectors, 12 VDC via coax. HRO Price \$79.95



VHF pre-amp (LNA-VHF-B) tuned low noise 137-174 MHz. 20 dB gain, BNC connector, VDC required. HRO Price \$79.95

Wideband Pre-Amp (LNA-WIDE-O) for 25 - 1300 MHz, outdoor all weather mast mounted. HRO Price \$299.95



Speakers

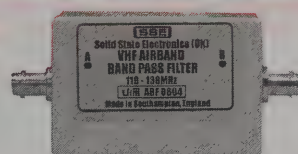


SpectrumForce Scanner Lapel Speaker
HRO Price \$19.95

Pillow Talk Extension Speaker 3.7" Model PT-9918. Features a 3.5mm mono jack plug. HRO Price \$36.95

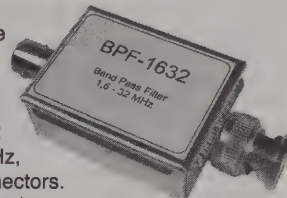


Receive Only Filters



Air Band Filter ABF 0604 filters interference from FM broadcast and public safety / weather broadcasts. Covers 118-138 MHz. HRO Price \$79.95

Shortwave Band Pass Filter



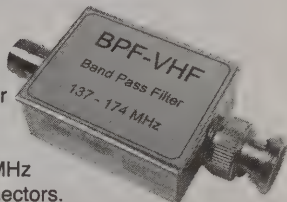
BPF-1632 1.6-32 MHz, BNC connectors. HRO Price \$49.95



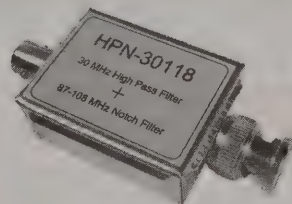
Air Band Filter

BPF-Air filters interference from 112-140 MHz air band transmissions. BNC connectors. HRO Price \$49.95

VHF Pass Band Filter



BPF-VHF passes 137-174 MHz BNC connectors. HRO Price \$49.95



Combined Notch Filter

For FM broadcast (87-109 MHz) and high pass (0-20 MHz) BNC connectors. HRO Price \$49.95

Adjustable Notch Filter 96 XI-1. Use the filter to notch out paging tones, voices and music that are on the same frequency you are listening to.* HRO Price \$79.95
*Receive only. Not for transmit.

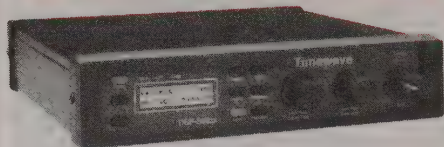


ENCODERS

NOISE & PASS FILTERS

Timewave Technology

Digital Processor



DSP-599zx

All Mode Noise Filter RTTY Modem

This powerful noise and QRM filter surpasses the newest "DSP" radios with its flexible features. Continuous filter tuning up to 5 kHz opens up wider bandwidth modes like shortwave, AM broadcast, and VHF/UHF FM. Heterodynes disappear, weak signals pop up from the noise, and the sharp filters slice away QRM.

The DSP RTTY modem (w/optional DSP-RTTY software) pulls out solid copy when you can barely hear a signal. An AM line noise filter dramatically reduces noise. Filter settings are easy-to-read on the backlit alphanumeric LCD display. Pushbuttons select noise reduction, memories, voice, CW, and data modes. Optical encoders tune the filters.

- Hyperspeed DSP - 27 ns, 36.8 MIPS.
- 2 selectable channels with multiple memories.
- Front panel programmable input sensitivity and line output level.
- AC line noise AM filter.
- Calibrated audio volt meter & generator.
- 13 preset data filters plus two user presets.

DSP-599zx HRO Price \$399.95

AC-5 P.S. \$24.95

Noise Canceller

ANC-4

The ANC-4 rf device eliminates or reduces power line noise, computer noise, TV generated interference, and other types of electrical noise. Attach the unit directly to the antenna connector of the receiver or transceiver to cancel locally generated noise before it affects the receiver AGC circuits. Reception of signals well below the noise level of the local interference is possible.

To cancel locally generated interference, the ANC-4 detects the interfering signal and adjusts its phase and magnitude so that it matches the offending interference at the receiver input, but is 180 degrees out of phase, effectively cancelling the interference. Front panel controls allow adjustment of both phase and magnitude, providing extremely deep cancellation.

Connect the ANC-4 between the main station antenna and the receiver antenna connector. A second antenna connects to the ANC-4 to pickup noise. A short wire antenna or a short collapsible whip is generally satisfactory for eliminating noises generated around the operating position or in the house, but an external antenna usually works better to eliminate noises generated outside the home. Any noise antenna that works, including combinations of horizontal and vertically polarized antennas, is satisfactory.

The ANC-4 operates as an active antenna by using the noise antenna and the NOISE GAIN control to amplify the antenna output. The unit can also be used as a diversity combiner to peak weak signals or null interfering signals. **HRO Price 189.95**

Encoders / Decoders



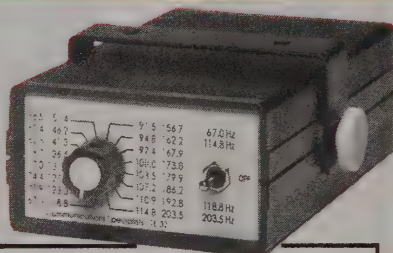
**DIGITAL COMMUNICATIONS
SPECIALISTS, INC.**

CTCSS Encoders

Tone encoders and decoders are just what you need to control your repeater or listen only to signals that are meant just for you.

TE-32 multi-tone CTCSS encoder is powered by a 6 to 28 vdc unregulated source, has a three position range switch, a frequency accuracy ± 0.1 Hz maximum over the temperature operating range. The TE-32 is low impedance (1K), low distortion, with adjustable sine wave output, 5 V peak to peak.

TE-32

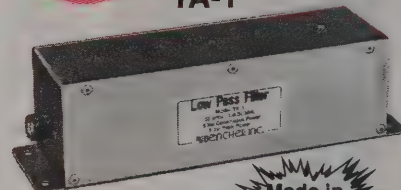


	Encode	Decode	Comments	HRO Price
TS-64DS	*	*	Universal design, CTCSS encoder / decoder capability for all FM transceivers	\$57.95
SS-64	*		DIP switch programmable CTCSS encoder for all FM transceivers	\$28.95
TE-32	*		Multi-purpose CTCSS / Burst Tone encoder	\$59.95

Low Pass Filter



YA-1



Bencher's low-pass filter has exceptional specifications. Working range: 1.8-29 MHz. Impedance: 50 ohms. Power rating: 1.5 KW continuous, 5 KW peak. Attenuation: at least 80 dB at 54 MHz.

HRO Price \$88.95

Bandpass Filters



DIGITAL COMMUNICATIONS INC.



**NEW!
Dual Band
Filter**

DCI-146 / 440-DB

Eliminate intermod with these band-pass filters for 144, 220, or 440 MHz or with the 2m / 440 MHz dual band filter. Connect a filter between your VHF / UHF base or mobile rig and antenna. Enjoy your favorite station without listening to the squawks and squeals of intermod. These filters reduce the strength of interfering signals while allowing the signals you want to hear to pass through at virtually full strength.

The filters are made to first-class specifications with silver-terflon connectors and extruded aluminum, copper and brass. In addition to the standard 4-pole filters, 7-pole and larger ultra-sharp filters are available. The DCI-146-4H intermod filter for 2 meters is 12" X 3" X 5" and has UHF connectors.

Model	Band	HRO Price
DCI-146-4H	2m	\$CALL
DCI-223.5-3H	220 MHz	\$CALL
DCI-445-10C	440 MHz	\$CALL
DCI-146/440-DB	2m/440 MHz	\$CALL

GRUNDIG/etón®



Satellit 750
\$300.00 – HRO Price

When you want full shortwave capabilities and a classic design, choose the Satellit 750. Advanced DSP technology and a 360-degree rotating AM antenna enhance the radio's tuning sensitivity to help you pull in weak signals. Listen to AM, FM, shortwave with SSB, and aircraft band frequencies. Program up to 100 of your favorite choices. You can also connect your MP3 player for even more listening choices.

- AM, FM, aircraft band (117-137 MHz) and shortwave (1711-30000 KHz).
- Set 9/10 KHz AM tuning; set FM tuning range.
- Single side band (SSB).
- Using DSP technology to enhance the highest sensitivity and selectivity with excellent S/N ratio and anti-interference results in good reception sound quality.
- 360 degree rotating AM antenna.
- Auto/manual/direct frequency key-in and station memory tuning.
- Auto tuning storage function (ATS) for FM/AM/shortwave.
- Dual alarm clock function.
- Mute function.
- 100 station memories (each band 100 memories, 500 customizable).
- 12K AM output socket.
- Line in socket (can be used as a speaker for MP3 players).
- Line out socket (radio broadcasting can be transferred to other devices).
- External antenna jacks for both AM and FM.
- USB (5 V) outlet for MP3 or mobile phone charging function.
- AC/DC 6V power supply included.

G3
Global
Traveler
\$150.00
HRO Price



The Global Traveler G3 is an AM / FM / Shortwave receiver with aircraft band, SSB (150-30000 KHz), RDS (Radio Data System) and Synchronous Detector. (118-137MHz).

- Dual conversion PLL digital tuner with digital LCD display showing frequency, time, sleep time and symbols for sleep time and alarm activation.
- 700 randomly programmable memories for all frequencies.
- Compact and light weight design.
- Synchronous detector with selectable side band.
- Clock, sleep times, and alarm function.
- Digital radiosystem system (RDS) on FM shows frequency, call letters, song title, date, and messages on the display when available.
- 3.5 mm headphone jack (earphones not included).
- Telescoping antenna for FM and SW reception.
- External jack for SW, FM and aircraft band antennas.
- Power source is 4 AA batteries (not included).

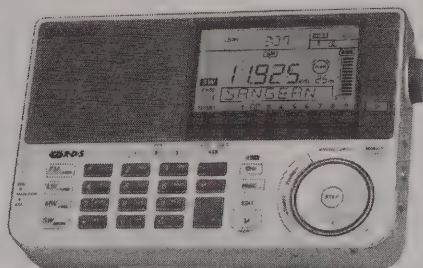
SWL RECEIVERS

SANGEAN

CL-100
Table-Top S.A.M.E.
Weather Hazard
Alert Radio
\$79.95
HRO Discount Price



The CL-100 can receive all NOAA reports to let people know about severe weather advisories, watches, warnings, conditions, civil emergencies, hazards, and evacuation details. The CL-100 can respond to emergency alert tones by activating a built-in audio or an external visual alarm. It features S.A.M.E. technology, the primary trigger for activating the US Hazards and EAS (Emergency Alert System) used by commercial radio, television and cable TV outlets.



NEW!
ATS-909X
\$259.95
HRO Discount Price

- 406 Presets.
- 5 tuning methods: auto scan, direct frequency, manual, memory recall, rotary.
- AutoTuning System.
- DSP decoder.
- Automatically searches for strongest signal.
- ATS auto tuning system.
- Large LCD screen.
- Rechargeable battery.
- Alarm: radio or buzzer.
- 2 editable city names.
- SSB (LSB and USB).
- FM stereo, LW, AM, SW.

WFR-20
\$249.95
HRO Discount Price



The WFR-20 Wi-Fi Internet radio offers direct access to over 6000 Internet radio stations and 21242 on-demand streams. Using the radio or your web browser and computer, you can search for specific stations. Up load the stations to "My Stations" folder for quick access. Don't have a computer? The WFR-20 provides access as a stand-alone unit. All you need is a broadband internet connection. Has large 3-line display, extra large clock display, 12 / 24 hour clock format, 4 alarm timers, aux input for MP3 player.



ATS-505P
\$109.95
HRO Discount Price

The world's first affordable professional digital multi-band receiver offers the performance and features of more expensive table model receivers. It has continuous coverage, auto-memory scan, SSB reception, auto present system, human wake system, illuminated display, dual time, 12/24 hour display, AM/FM stereo/SW receiver, auto/manual search, tone control, keypad entry, 9/10 kHz switch.

SHORTWAVE LISTENING

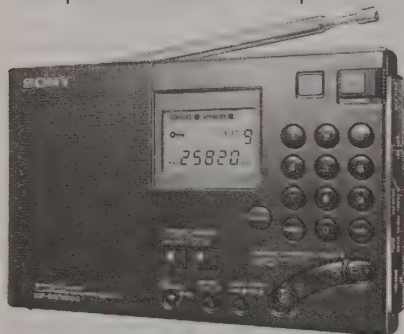
SONY

ICF-SW7600GR

\$159.95 – HRO Price

Travelers love this versatile World Band Radio® receiver with stereo FM reception and instant access to all channels and bands. Built-in clock timer has sleep / stand-by functions.

- AM (LW, MW, SW) / FM stereo reception.
- Dual-conversion superheterodyne circuitry.
- 10-key direct access™ tuning.
- Liquid crystal display (LCD).
- PLL quartz synthesis tuning gives accurate, drift-free frequency selection.
- A 3" speaker and high / low tone provides a wide range of sound for music or news.
- Manual & automatic scan tuning.
- A jack for easy antenna connection.
- Antennas: built-in ferrite bar for MW / LW & a telescoping whip.
- SSB circuitry receives voice and Morse code (CW) on amateur bands.
- Requires 4 AA batteries (not included) or the optional worldwide AC adapter.



24 Hour FAX Order Numbers

Anaheim	714-533-9485
Atlanta	770-263-9548
Burbank	818-842-5283
Denver	303-745-7394
New Castle	302-322-8808
Oakland	510-534-0729
Phoenix	602-395-1244
Portland	503-684-0469
Salem	603-898-1041
San Diego	858-560-1705
Sunnyvale	408-736-9499
Woodbridge	703-494-3679

Software Designed Radios

RFspace

Wideband Digital Radio – NetSDR
High Performance 16 bit SDR on the Network



HRO Price \$CALL

The NetSDR radio is a high performance networked SDR with 1.6 MHz bandwidth. The NetSDR uses a high performance 80 MHz, 16 bit ADC with both dithering and randomization for best performance. The output I/Q bandwidth is configurable via software. PC communications are handled over a 100 base-T port using 24 or 16 bit I/Q words.



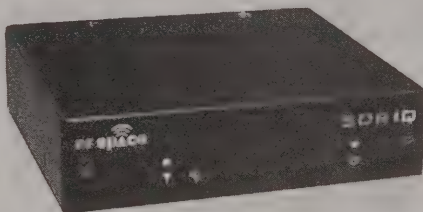
The NetSDR is a complete plug and play solution. As opposed to other SDRs in the market, there is no need for additional preamplifiers, preselectors or code development. The unit is compatible with the Moetronix SpectraVue and SDR-Radio software that will have you up and running in minutes. The software includes analog and digital mode demodulation and I/Q capture of spectrum at up to a 1.6 MHz bandwidth. The SDR radio software allows the use of the NetSDR over the Internet. The full 1.6 MHz waterfall and demodulation audio can be transported via a 5 KB/s link.

The NetSDR packets are fully routable. This means that the receiver can be placed at remote locations. Multiple receivers can also be combined and its data transported over a higher data rate ethernet pipe using simple switches and routers. In this application, each NetSDR can be set to a different IP address or port.

SDR-IQ™

Software Defined Radio, Spectrum Analyzer and Panoramic Adapter

HRO Price \$499.95



The SDR-IQ™ is a software-defined HF receiver with a spectrum analyzer and demodulation capabilities. The hardware samples the whole 0.0001-30 MHz band using a high performance, 14 bit analog-to-

digital converter (ADC) running at 66.6 MHz. The digital data from the ADC is processed into I and Q format using a direct digital converter (DDC). The I and Q data is then sent to the PC for processing using a USB 2.0 interface. All of the demodulation and spectral functions are done on the PC side.

The SDR-IQ™ comes with a high frequency (HF) amplified front-end with switched attenuators, switched filters, and 1 Hz tuning. The SDR-IQ™ comes with the latest version of SpectraVue™ software. It supports AM, WFM, USB, LSB, N-FM, DSB and CW with fully adjustable DSP filter bandwidths and FFT sizes of 2048 to 262144 points. The resolution bandwidth is as low as 0.031 Hz.

Uses

- High performance HF Receiver with 190 KHz realtime panoramic adapter.
- Ultrasound experimentation (Sonar, underwater ultrasound, bat and insect detectors).
- Infrared subcarrier detection / communications.
- Record up to 190 KHz of spectrum to hardrive for later playback and demodulation
- Panoramic adapter for communication receivers (any IF in HF band 455 KHz, 8.83 MHz, 10.7 MHz, 21.4 MHz, etc.).
- Very low frequency (VLF) studies.
- Spectrum analyzer backends.
- Processor for radio astronomy receivers.

Key Features

- Maximum display bandwidth of 196 KHz at an incredible 0.75 HZ RBW.
- Records and plays back spectrum segments.
- Covers 500 Hz to 30 MHz.
- Drivers for Linux and Windows.
- Network server application for Linux and Windows. Allows remote use of the radio across high speed internet.
- Directly interfaces with Icom, Kenwood, Elecraft, and Yaesu radios as a tracking panoramic adapter.
- Built-in serial RS-232 port.
- Supports AM, FM, NFM, WFM, LSB, USB, CW, CWR, DSB, DRM and custom demod filters / offsets.
- Outputs data in I/Q Wave Format, Excel and graphic formats with resolutions as wide as 262144 pixels.

SCANNER / SWL / WIDEBAND ANTENNAS

SWL Antennas

ALPHA DELTA

DX-SWL

The DX-SWL is tuned for the most popular SWL bands (13, 16, 18, 19, 21, 25, 31, 41, 49, 90 and 120 meters). It can be used as a multi-band transmit antenna with the appropriate antenna tuner. Length is 60 feet. Requires a single support. Standard coax connects antenna to your radio. Feed point is 50 ohms. SO-239 connection. **HRO Price \$120.95**

DX-ULTRA

The multi-element DX-ULTRA has extremely low-noise performance. Tapered wing design allows broadband operation. Configure as dipole, inverted vee, or sloper. Covers MW, tropical, SW, government, military, embassy, maritime, aircraft, and commercial frequencies. 80 feet long. Made with ISO-RES inductors and parallel wire elements. Uses the Delta-C center insulator, Delta-CIN end insulators, and 12 gauge solid copper wire with grey PVC insulation. Elements are separated by grey PVC rod. **HRO Price \$160.95**

Wideband

SCANNER MASTER

Spectrum Force Mag Mount

This wideband antenna comes with a BNC or SMA connector. Covers 25-1300MHz. Height is 17" including base. BNC fits most scanners

HRO Price \$19.95 / BNC
HRO Price \$19.95 / SMA

DD1300 Double Discone Base

A high gain discone receiving antenna with low SWR across VHF/UHF bands.

HRO Price \$149.95

Call HRO
for SWL Books

Log Periodic



CLP5130-1

The **CLP5130** antennas are high gain, wide band VHF/UHF log periodic beams for horizontally polarized base station use. Covers amateur bands from 50-1300 MHz, FM broadcasting, scanning, VHF / UHF TV, air band communications, government and business bands.

Forward gain is 10 to 12 dB - 10 to 16 times the gain of a nondirectional discone type antenna. The VSWR is less than 2.0:1 across the band. The high-quality aluminum antennas have a boom design that allows movement of the phasing line. Distortions in the vertical and horizontal planes are minimized and element adjustment is not necessary. The boom-to-mast bracket is made of a lightweight and rugged magnesium alloy.

Create Antennas

	CLP 5130-1	CLP 5130-2
Frequency	50-1300 MHz	108-1300 MHz
No. Elements	23	19
Power PEP	500W	500W
Forward Gain	10-12 dBi	10-12 dBi
Front/Back	15 db	15 db
Longest element	9' 10"	4' 6"
Boom length	5' 9"	4' 6"
HRO Price	\$449.95	\$319.95

Wall Clock

GEOCHRON

Global Time Indicator

A "must
item" for a
First Class
Ham Shack

Size:
34" x 22" x 5"

Geochron is a true global time indicator. At any moment, Geochron displays the correct time everywhere in the world - the week, date, the sun's declination and distribution of daylight and darkness on the earth's surface. Geochron is available in four (4) models and a multitude of housing finishes and trim colors. Packaged for "drop shipment" anywhere in the world via UPS. Geochron can be surface mounted on the wall like a picture or recessed using optional mounting brackets. **Call HRO for special pricing opportunities.**



DIAMOND ANTENNA

D-130J D-130NJ Super Wideband Discone

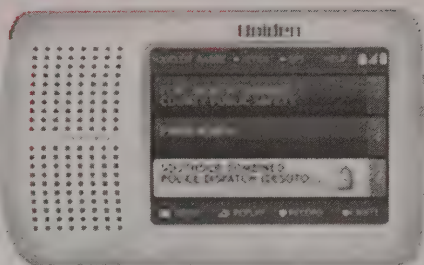
Monitor 25-1300 MHz. Transmit on 50, 144, 430, 1200 MHz. All stainless steel. Input power 200 watts maximum. Impedance: 50 ohms. VSWR: 1.5:1. Length: 1.7 meters. Mounts on 1" to 2" masts. D-130 UHF and D-130NJ Type-N connector. **HRO Price D-130J \$99.95; D-130NJ \$99.95**



Mobile Scanner

Home Patrol

\$CALL
HRO Price



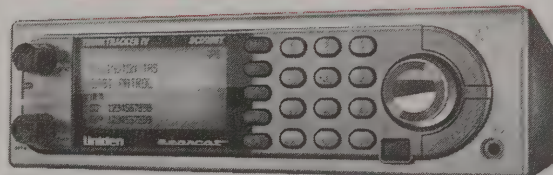
BCD-396XT TrunkTracker IV Handheld

\$CALL
HRO Price



- Enter your zip code to see a list of agencies you will hear in your local area.
- Hear emergency calls, weather, spotters, and public safety activities.
- Touch screen entry on 3.5 inch color LCD screen.
- Multiple set up options using zip code, city, GPS (not included) or let the unit automatically determine its location.
- AM / NFM / FM.
- 4 NiMH 2300 mAh batteries included.
- While on the road you can monitor road and traffic conditions through local agency broadcasts.
- Plug in an optional GPS and the unit monitors channels wherever you are.
- Portable battery operation.
- AC / DC adapter included.
- Covers 25-53.995 MHz, 136-512 MHz, 758-960 MHz.
- MicroSD type memory slot.

Mobile Trunking Scanner with GPS Support and APCO-25

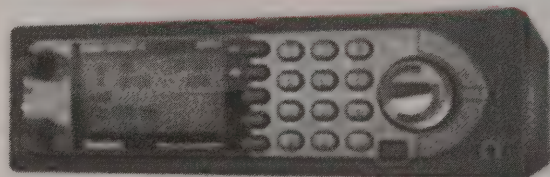


BCD-996XT

\$CALL – HRO Price

- 6000 dynamically allocated channels.
- Location-based scanning.
- TrunkTracker IV (Motorola APCO 25 digital, EDACS, LTR).
- 100 system quick keys.
- Dual color display.
- Temporary lockout.
- Dangerous crossing, dangerous road and POI alert.
- DIN-E mounting.
- Multi-site trunking support.
- Close-Call™ RF capture technology.
- Public safety scanner.
- PC control/programming (free download).

BearTracker Mobile Trunking Scanner with GPS Support



BC-T15X

\$CALL – HRO Price

- Frequency coverage 25-512, 758-960 (cell band blocked), 1240-1300 MHz.
- 2500 dynamically allocated channels.
- Up to 400 systems.
- TrunkTracker III.
- Location-based scanning.
- 100 system quick keys.
- BearTracker™ warning system.
- Close Call™ RF capture technology.
- Dangerous crossing, dangerous road and POI alert.
- Public safety scanner.

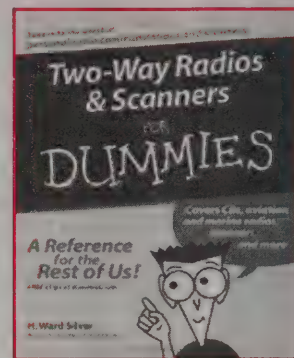
Ham Radio Outlet Accepts



HRO stocks many books with frequencies for localities around the country. Contact your nearest HRO for details.

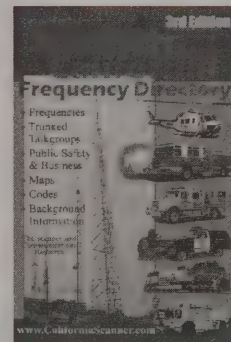
Two-Way Radios & Scanners for Dummies

HRO Price \$21.99



Scannerstuff

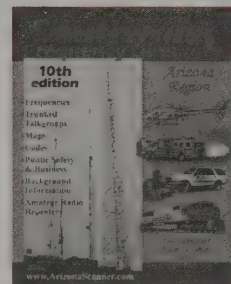
Southern California Frequency Directory



3rd Edition
Covering 10 Southern California counties in detail, the SCFD is the most up-to-date scanner information resource for the area. Organized by county for easy use,

this 448 page directory includes frequencies, channel numbers, PL tones, trunked frequencies and maps. **HRO Price: \$24.95**

Southwest Frequency Directory (10th Edition)



The most up-to-date directory for Arizona has 256 pages of scanner frequencies, codes, aircraft, businesses, and talk-groups for public safety.

Organized by county, it includes detailed coverage of the new Phoenix/Mesa digital trunked radio system. **HRO Price: \$34.95**

SCANNERS

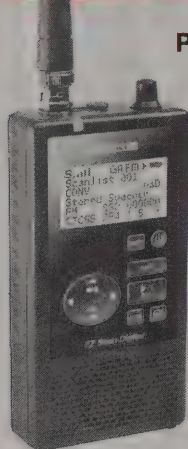


GRE America, Inc.

Take Control With GRE!

EZ Scan

**PSR-800
\$CALL**



The PSR-800 EZ Scan is the first scanner that lets you find-what you want to hear without knowledge of local communications systems.

- Combines simple controls like those used in an MP3 player.
- Menu allows instant access to trunking systems and frequencies used by Public Safety, Government and Business throughout the US and Canada.
- Select only the local systems.
- Select state, county, and view stations you can monitor.
- Complete US and Canada database on a MicroSD card.
- Recording function.
- Multi-color Alert LED.
- Full dot matrix, high contrast WHITE color backlight LCD.
- Keypad optimized for one hand operation.
- Scans digital and analog trunked radio system signaling formats including Project 25, Motorola Type I/II/Hybrid, EDACS and LTR systems.
- Upgradable CPU firmware and DSP firmware library. Free upgrades through EZ scan digital software utility program.
- CTCSS and DCS subaudible decoder.
- Weather receive mode.
- Spectrum Sweeper rapidly finds nearby signals even if you do not know the frequencies.

Triple Trunking

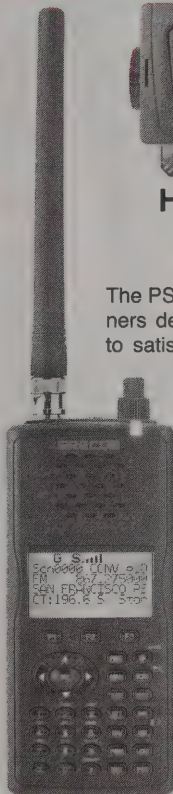
**Handheld
PSR-310
\$CALL**

**Base / Mobile
PSR-410
\$CALL**

The PSR-310 and PSR-410 are a new generation of scanners designed for ease of use, yet are powerful enough to satisfy the most sophisticated experts. Common data entry, browsing and control methods are used for non-trunked conventional channels, trunking talkgroups, search configurations and Spectrum Sweeper setups. The radio grows with you - you can start out with a small, easy to manage configuration, then expand it whenever you need to.

Features for both rigs:

- New Object Oriented User Interface
- Wide Band Reception
- Multi-System Analog Trunking
- Exclusive Multi-Color Alert LED
- Subaudible Squelch Decoder
- Full dot matrix bitmap LCD Display with white LED backlight
- SAME Weather Alerting
- High Speed PC Interface
- User Upgradable CPU Firmware



Handheld, Desktop & Mobile

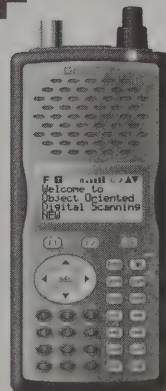
Digital



**PSR-600
\$CALL**

**PSR-500
\$CALL**

- Selected bands from 25-1300 MHz (cellular excluded).
- Intuitive "Object Oriented" user interface design for ease of use.
- Powerful and flexible scan list functionality.
- Flexible Free-Form Memory Organization.
- Menu-driven programming with context-sensitive help.
- Upgradeable CPU and DSP Firmware lets you keep your radio current with software enhancements.
- V-Scanner Technology lets you save complete radio configurations for quick recall.
- Multi System Trunking.



SOFTWARE

Scanner Software

BuTel

Scanner software is essential for the proper programming of complex scanners today. Butel's user-friendly and feature-rich software allows for both programming, and with the PRO versions, control and logging for scanners. Limited versions offer programming only at a special price. Auto-download frequencies and trunking with a RadioReference subscription for most versions. Requires Windows 98 or later. Basic and Pro versions are available as noted.

HRO Prices

Basic version (B) \$39.95
Pro version (P) \$69.95
Limited version (L) \$29.95

Uniden Bearcat Software

ARC-XT (B) (P) BC346XT, 396XT, 15XT, 996XT
ARC996 (B) (P) Bearcat BCD-996T
ARC15 (B) (P) Bear Tracker BCT15
ARC396 (B) Bearcat BCD396T
ARC246 (B) Bearcat 246T
ARC8 (B) Bear Tracker BCT8
ARC898 (B) Bearcat 898T
ARC230 (B) Sportcat SC230
ARC330 (B) (P) Bearcat BR330T
ARC250 (B) (P) BC250, 296, 785, 796
ARC780 (B) Bearcat 780XLT

GRE Software

ARC100 (L) PSR100, PSR200
ARC300 (L) PSR300, PSR400
ARC500 (B) PSR500, PSR600 (includes control)

RadioShack Software

ARC96 (L) PRO96, PRO2096
ARC135 (L) PRO135, PRO136
ARC137 (L) PRO137
ARC160 (L) PRO160, PRO162
ARC300 (L) PRO97, PRO163, PRO164, PRO2055
ARC433 (L) PRO433, PRO528, PRO2051
ARC500 (B) PRO106, PRO197 (includes control)

AOR Receivers

ARC5000 AR5000 \$99.95
ARC8200 AR8200 \$69.95
ARC8600 AR8600 \$69.95

Icom Receivers

AR2 R-2 \$39.95
AR3 R-3 \$39.95

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

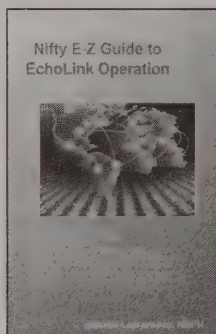
Radio Manuals

Nifty Mini-Manuals

Mini-Manuals are fully laminated, spiral bound booklets, 4.25 x 8 inches, providing simplified step-by-step instructions for all your radio's features. These short-form manuals are smaller, more durable, and easier to use than manuals normally supplied with a radio.

Yaesu / Wouxun

Model	Mini-Manual Description	HRO Price
NIFTY-FT1900	Mini Manual, FT-1900	\$16.95
NIFTY-FT-2000/D	Mini Manual FT-2000	\$20.95
NIFTY-FT250R	QWIK Ref Card FT-250R	\$5.95
NIFTY-FT270R	QWIK Ref Card FT-270R	\$5.95
NIFTY-FT350M	Mini Manual, FTM-350	\$22.95
NIFTY-FT2900	Mini Manual, FT-2900	\$16.95
NIFTY-FT60R	QWIK Ref Card FT-60R	\$5.95
NIFTY-FT-450D	Mini Manual, FT-450D	\$20.95
NIFTY-FT7800R	Mini Manual, FT-7800	\$16.95
NIFTY-FT7900R	Mini Manual, FT-7900	\$16.95
NIFTY-FT817/ND	Mini Manual FT-817	\$16.95
NIFTY-FT857/D	Mini Manual FT-857	\$16.95
NIFTY-FT8800R	Mini Manual FT-8800	\$16.95
NIFTY-FT-8900R	Mini Manual FT-8900	\$16.95
NIFTY-FT897/D	Mini Manual FT-897/897D	\$16.95
NIFTY-FT950	Mini Manual FT-950	\$20.95
NIFTY-FTM10R	Mini Manual FTM-10R	\$16.95
NIFTY-VX3R	VX-3R Dual Card	\$7.95
NIFTY-VX6R	Mini Manual VX6R	\$18.95
NIFTY-VX7R	Mini Manual VX7R series	\$18.95
NIFTY-VX8R	Mini Manual & Ref Card	\$24.95
NIFTY-VX8DR	Mini Manual & OP Card	\$24.95
NIFTY-VX8GR	Mini Manual & OP Card	\$24.95
NIFTY-WOUXUN	Qwik Ref Card Wouxun HT's	\$5.95

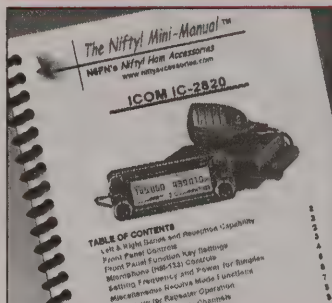


Nifty E-Z Guide to EchoLink™ Operation

HRO Price \$13.95

• Ideal reference for those getting into EchoLink.

- Straight forward and simple explanations written for both beginning & experienced users.
- Voice over Internet technology and repeater linking.
- EchoLink computer users, Simplex Links, and Repeaters.
- Installing and using EchoLink software.
- Call sign validation and authentication.
- Making contacts using your computer or DTMF equipped transceivers.
- RF Link transceiver requirements.
- Establishing RF EchoLink simplex and repeater nodes.
- Create a node by interfacing your transceiver to a computer.
- Setting up computer to transceiver interfaces.
- Configuring EchoLink's sysop setup menus.
- Adding EchoLink capability to a repeater.
- Clear and easy to read, numerous illustrations.



Icom

Model	Mini-Manual Description	HRO Price
NIFTY-IC-706MKIIG	Mini Manual IC-706MKIIG	\$16.95
NIFTY-IC-718	Mini Manual IC-718	\$16.95
NIFTY-IC-746PRO	Mini Manual IC-746PRO	\$20.95
NIFTY-IC-80AD	Mini Manual + Card IC-80AD	\$24.95
NIFTY-IC-92AD	Mini Manual + Card IC-91	\$24.95
NIFTY-IC-91A/AD	Operating Manual IC-92AD	\$22.95
NIFTY-IC-R20	Mini Manual + Card IC-R20	\$19.95
NIFTY-IC-2820H	Mini Manual IC-2820H	\$20.95
NIFTY-IC7000	Mini Manual IC-7000	\$20.95
NIFTY-IC7200	Mini Manual IC-7200	\$16.95
NIFTY-IC-756PROIII	Mini Manual IC-756PROIII	\$20.95
NIFTY-IC7600	Manual IC-7600	\$24.95
NIFTY-IC7700	Manual IC-7700	\$24.95
NIFTY-IC7800	Mini Manual IC-7800	\$24.95
NIFTY-IC-910H	Mini Manual IC-910H	\$20.95
NIFTY-ID880H	Mini Manual ID-880H	\$22.95

Kenwood

Model	Mini-Manual Description	HRO Price
NIFTY-TH-F6A	Mini Manual TH-6A	\$18.95
NIFTY-TH-D72A	Mini Man + Ref Card	\$24.95
NIFTY-TM-D700A	Mini Manual TM-D700A	\$16.95
NIFTY-TM-D710A	Mini Manual TM-D710A	\$19.95
NIFTY-TMG707A	Ref Card for TM-G707A	\$5.95
NIFTY-TM-V71A	Mini Manual TM-V71A	\$18.95
NIFTY-TS2000	Mini Manual TS-2000	\$18.95
NIFTY-TS-480S/HX	Mini Manual TS-480	\$18.95
NIFTY-TS-570D/S	Mini Manual TS-570	\$16.95

MFJ

Model	Mini-Manual Description	HRO Price
NIFTY-MFJ259B	Mini Manual MFJ-259B	\$12.95
NIFTY-MFJ269	Mini Manual MFJ-269	\$12.95

Miscellaneous

Model	Mini-Manual Description	HRO Price
NIFTY-MM-BandPlan	Amateur Radio Band Plan	\$10.95
NIFTY-D-STAR-BOOK	E-Z Guide to D-Star Operations Book	\$13.95
NIFTY-DXGUIDE	DX Field Guide Book	\$15.95
NIFTY-HT-STAND	HT Stand	\$34.95
NIFTY-PSK31-BOOK	E-Z Guide to PSK31 Operations	\$12.95
NIFTY-RADIOMG	Radio Monitoring Guide	\$15.95
NIFTY-ECHO-LINK-BOOK	Guide to Echolink	\$13.95

Software is sold on a non-returnable basis.
Any software problems will be resolved under the terms of the manufacturer's warranty.



Gordon West

Study with the Best!

Part Number	Description	HRO Price
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Study Manuals

GWTM	Technician Class Book	\$20.95
GWTW	Technician Audio Theory Course on 6 CDs	29.95
NCS	Tech Book plus Software Package	29.95
GWGM	General Class Book	24.95
GWGW	General Audio Theory Course on 4 CDs	29.95
GWEM	Extra Class Book	24.95
GWEW	Extra Audio Theory Course on 7 CDs	39.95
ECS	Extra Book plus Software Package	39.95
HOS	W5YI Ham Operator Software - no books	39.95
HOSB	W5YI Ham Operator Software plus 3 books	94.95
GUS	General Book + software	34.95

Morse Code Study Materials

GW05	Morse Code 0-5 wpm	39.95
GW13	Morse Code 6-16 wpm	39.95
GW20	Morse Code 10-28 wpm	39.95
GWCT	CW Refresher Course 0-5 wpm, 2 audio CDs	14.95

Other Books

GSE	Getting Started in Electronics	19.95
MINI-1	Mini Notebook, Vol. 1: timer, op amps, optoelectronic circuits and projects	12.95
MINI-2	Mini Notebook, Vol. 2: science and communication circuits and projects	12.95
MINI-3	Mini Notebook, Vol. 3: electronic sensor circuits and projects	12.95
MINI-4	Mini Notebook, Vol. 4: electronic formulas, symbols and circuits	12.95
BELC	Basic Electronics	19.95
BDIG	Basic Digital Electronics	19.95
BCOM	Basic Communications (analog) Electronics	19.95
GROL	Get Your Commercial	49.95
+RADAR	Radio License - Book	
GRSP	Get Your Commercial	79.95
+RADAR	Radio License - Book plus W5YI Study Software Package	

AMATEUR BOOKS

Ham Overview

Ham Radio For Dummies

HRO Price \$21.99

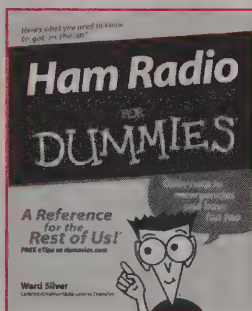
Hams do cool things like talking to folks around the world and helping with communications during emergencies. If hamming it up sounds like fun, here's the scoop, including licensing requirements and how to set up a station. And if you're already licensed, this book will help you start sounding (and feeling) like a pro!

The Dummies Way

- "Get in, get out" information.
- Explanations in plain English.
- Icons and other navigational aids.
- A dash of humor and fun.
- Tear-out cheat sheet.
- Top ten lists.

Discover how to:

- Set up a radio shack.
- Communicate on air.
- Prepare for license exam.
- Be a ham on the go.
- Learn ham jargon.
- Help in an emergency or natural disaster.



Flash Cards

Flash-and-Pass

Study for your license exams with these easy-to-use Flash and Pass study cards.

HRO Prices

Technician Class Flash Cards

Flash-TECH \$24.95

General Class Flash Cards

Flash-GEN \$39.95

Extra Class Flash Cards

Flash-EXTRA \$39.95

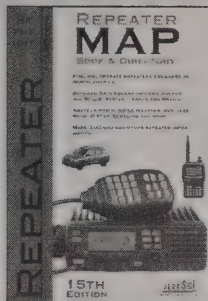
Ham Magazines

CQ	CQ Monthly
CQVHF	CQ VHF Quarterly
Popular	Popular Communications
QST	QST Monthly
MT	Monitoring Times Monthly

CQ Publications

ARC2012	Amateur Radio Calendar 2012
BAUBAU	Building & Using Baluns & Ununs
LMOA	Lew McCoy on Antennas
Quadantennas	Quad Antennas
TPROM	Packet Radio Ops Manual

artsci



U.S. Repeater Map Book 15th edition USRG

The PERFECT traveling companion for the radio enthusiast. Road maps show major highways and cities in every state. Amateur radio repeater frequencies are included. This is a must for truckers and travelers. Enhanced maps provide great highway detail. **HRO Price \$14.95**

Guides to Technical Radio Modifications & Alignment Controls RTM

Easy to follow instructions (with detailed drawings) to enhance almost all brands of amateur HT's and mobiles. Includes extended frequency plans. **HRO Price \$19.95 each**

Volume A

(Icom, Kenwood, Scanners)

Volume B

(Alinco, Standard, Yaesu, others)

Reference Book

HRO Price \$12.95

Pocket Reference

Third Edition

This concise all-purpose reference has hundreds of tables, maps, formulas, constants & conversions. More than 200 new pages and thousands of updates!

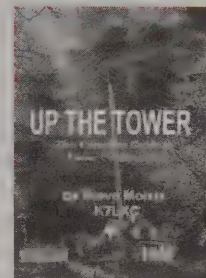


Towers & Antennas

Up the Tower

*The Complete Guide to
Tower Construction*
by Steve Morris, K7LXC

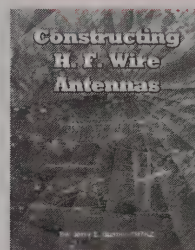
This is the first tower book of its type ever published. It includes abundant information on all aspects of tower construction, use, and care from the foundation to the antenna installation. Steve Morris gathered this collection of invaluable information during his years as a professional installer of amateur and commercial towers. Read about regulatory concerns, guy wires, safety equipment, and more. **HRO Price: \$35.00**



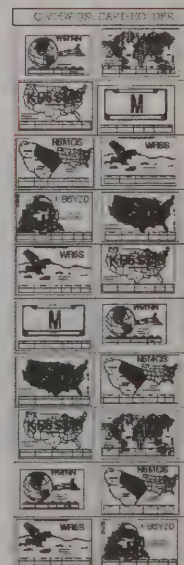
Constructing HF Wire Antennas

by Jerry Bustin, KR7KZ

All the basics needed to construct wire antennas for Amateur radio or short-wave listening. **HRO Price \$19.95**



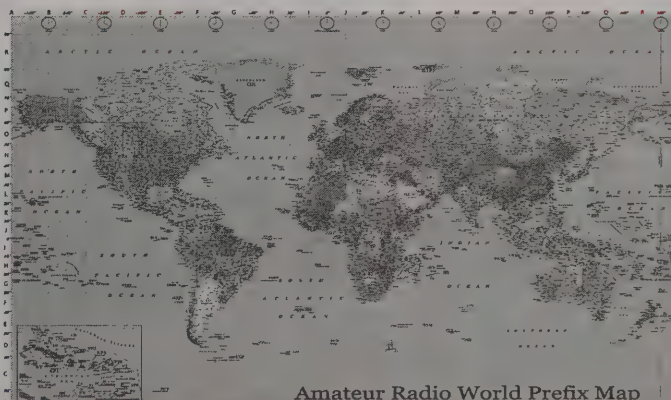
QuickView QSL Holder



Prefix Map

Amateur Radio World Prefix Map

HRO Price \$9.95



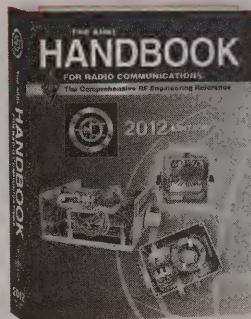
Amateur Radio World Prefix Map



ARRL BOOKS

The ARRL Handbook for Radio Amateurs

The most complete update in a decade! Entire sections are updated: analog and digital signals and components; surface-mount components; high-speed multimedia (HSM); previously unpublished



antennas and advice on baluns; satellites and EME, now with new phase 3E details; oscillators, DSP and software radio design; a new chapter with Internet tips for hams, wireless fidelity (Wi-Fi) and other wireless and PC technology.

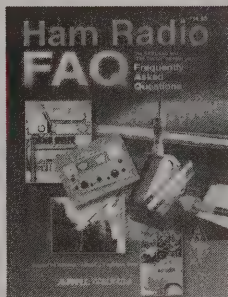
Thorough coverage of theory, references and practical projects. Here is an unmatched source for building receivers, transceivers, power supplies, RF amplifiers, station accessories and antennas. Now with more antenna projects and a 10-W, 60-meter SSB transceiver! Something for all skill levels.

Includes ARRL Handbook CD (version 9.0) – the fully searchable and complete book on CD-ROM (including many color images).

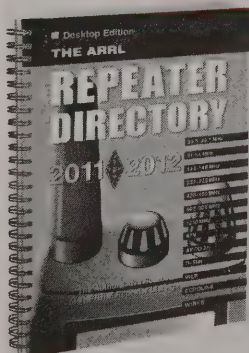
Softcover w/ CD \$49.95
Hardcover w/ CD \$59.95

Ham Radio FAQ

You've got questions . . . We've got answers! The ARRL Lab's Technical Information Service and "The doctor" have been answering ham's questions for nearly 8 decades. This book is a compilation of actual questions and their answers. Also includes a reference chapter. **HRO Price: \$14.95**



ARRL 2011-12



Repeater Directory

- Thousands of FM voice and ATV repeater frequencies.
- Latest directory of Frequency Coordinators.
- Coverage of North, Central, South America, & some listings in Europe and the Middle East.

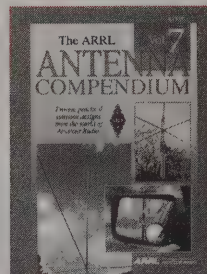
• Now including IRLP (Internet linked) nodes.
HRO Prices: Pocket Size \$10.95
Desk Size (pictured) \$15.95

Antennas / Towers

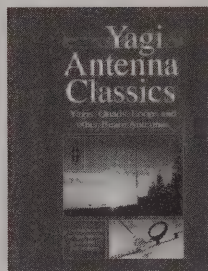
ARRL Antenna Compendium

Volume 7

43 all new articles! Nine articles deal with low-band antennas and operating, 4 on antennas for 10 meters and many more. Learn how to motorize a tower, how to safely put up a through-the-roof antenna system. CD-ROM included with propagation prediction software!



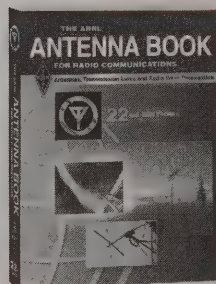
HRO Price \$24.95



Yagi Antenna Classics

This collection of articles covering all types of beam antennas was taken from QST, QEX, NJ and other ARRL publications. Written by some of the best known authors on the subject, the articles provide the reader with a historical perspective, novel ideas and computer optimized designs. **HRO Price: \$17.95**

The ARRL Antenna Book



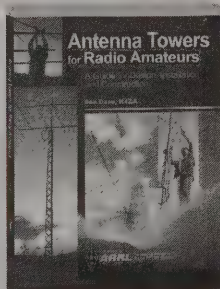
22nd Edition

Hams and professionals will find projects and practical information on designing, building, and installing almost any imaginable type of antenna. Select and use the proper feed line and antenna tuner. Expanded coverage of low frequency antennas.

Greatly expanded coverage of elevation angles needed for world-wide HF propagation. New chapters cover the fundamentals, including the effects of irregular local terrain, plus more information on mobile and maritime antennas. Software included (MAC and PC). **Retail \$44.95**

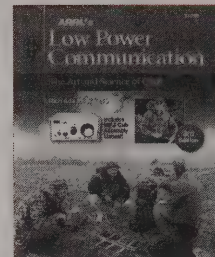
Antenna Towers for Radio Amateurs

Guide to design, installation, and construction by Don Daso K4ZA. Learn skills, tools, climbing techniques, and safety measures to use from the base to the antennas. Work with rope, pulleys, wiring, guys, and associated hardware. **HRO Price: \$34.95**



Low Power

Low Power Communication



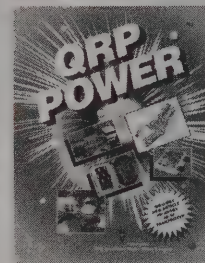
The Art and Science of QRP

by Richard Arland, K7SZ

Here's the low-down on low power operating, from selecting gear, to advanced operating techniques, antennas, emergency communications, solar power, and more!

208 pages. **HRO Price: \$14.95**

QRP Power



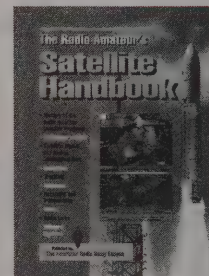
Whether you've just been bitten by the urge to operate flea power, or you've already discovered just how much fun it is to operate with 5 watts or less, this is the book you've been looking for. It's crammed with projects you can build and resource information you can use. In addition to the best recent QRP-related articles from QST, QEX and The ARRL Handbook, there's a new, in-depth article on NN1G's popular 40-40 transceiver. **\$19.95**

Satellites & Space

The Radio Amateurs Satellite Handbook

By Martin Davi-doff, K2UBC

The most comprehensive book about amateur satellites! Long-time operators and beginners will enjoy its in-depth coverage: setting up a station, choosing the right antenna for the right satellite, and tracking the "birds." Includes operating details for every active amateur satellite, the upcoming Phase 3D satellite, and all Amateur Radio operations from the US Space Shuttles (SAREX) and Russian Mir space station. Thorough appendices covering profiles of computer programs, Internet sites, FCC Rules, and a complete history of amateur satellite and space operations. **HRO Price \$24.95**



ARRL TECHNICAL BOOKS

HK	Hints and Kinks (16th ed.)
ITRFD	Intro to Radio Freq. Design
LBD	Low Band DXing
MEM	Microwave Experimenter Manual
OM	Operating Manual
PDOYA	Yagi Design
RASH	The Radio Amateur's Satellite Handbook
Reflections	SWR Theory
RFE	RF Exposure and You
RFI	Radio Frequency Interference
RSGB-Awards	Awards Book
RSGB-Opman	Amateur Radio Operating Manual
RSGB-RCH	Radio Communication Handbook
RSGB-VHF	VHF / UHF Handbook
SA	Satellite Anthology
SEH	Satellite Experimenters Handbook
SSS	Spread Spectrum Source Book
TFRB	FCC Rule Book (13th ed.)
TLT	Transmission Line Transformers
TAH	ARRL 2008 Handbook
WSH	Weather Satellite Handbook

ARRL LISTINGS

DXCC LIST	Official ARRL DXCC List
LB	Log Book
ND	Net Directory
RD	Repeater Directory

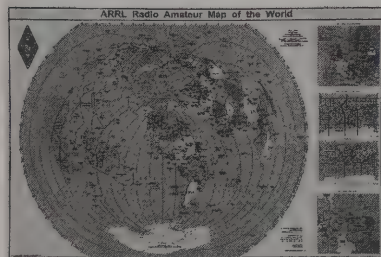
ARRL READING

CQGS	CQ Ghost Ship
DVQTH	Death Valley QTH
DXBD	DX Brings Danger
DXCC Companion	DX Guidebook
HFNH	Help for New Hams
MBQ	Murder by QRM
NCJ	Bi-Monthly National Contest Magazine
NS	Night Signals
NN	Novice Notes
QRP NOTE	QRP Notebook
QST	Monthly Magazine of ARRL
SOSAM	SOS at Midnight
YVC	Your VHF Companion
ET	Easy Target Novel



ARRL MAPS

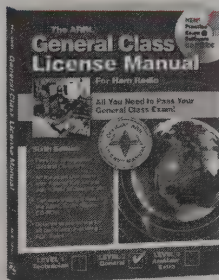
WM	World Map (Azimuthal)
WM-R	World Map (Robinson)
GRID ATLAS	Grid Locator Atlas
GRID MAP	Grid Locator Map
MONA	Amateur Radio Map of North America



ARRL ANTENNA BOOKS

AB	21st Antenna Book
ACVOL5	Antenna Compendium Vol. 5
ACVOL6	Antenna Compendium Vol. 6
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RSGB-ANT	H.F. Antenna Book
RSGB-WIRE	Wire Antennas
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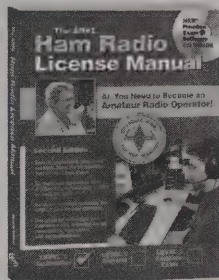


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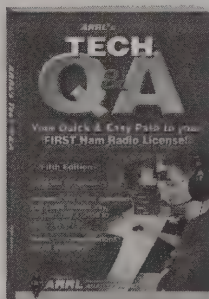
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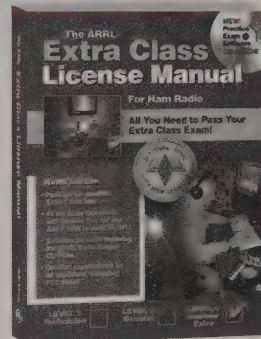
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HRLM Ham Radio License Manual
TAGCLM General Class Manual
TAECLM Extra Class Manual
TFRB FCC Rule Book

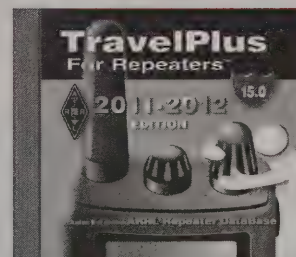


Extra Class License Manual Revised 9th Edition

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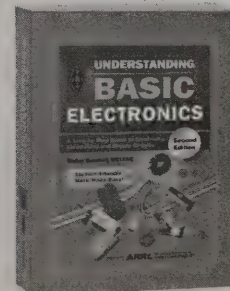
ARRL Electronics

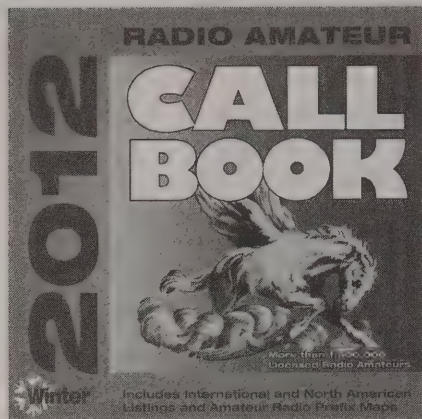
Understanding Basic Electronics

— A Step-by-Step Guide to Electricity, Electronics and Simple Circuits

Second Edition By Walter Banzhaf, WB1ANE
HRO PRICE \$29.95

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- Shows CQ, ITU zone, continent.
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ARRL CD-ROMs



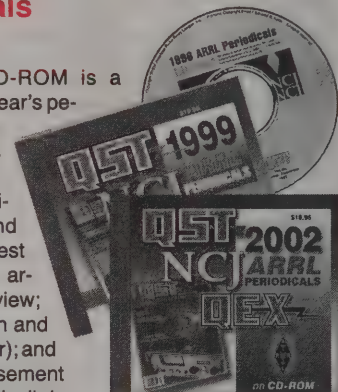
QST View

Back issues of QST on CD-ROMs. All the ads, articles, columns and covers have been scanned in black-and-white to read on screen or print. Easy-to-use software included allows you to: search for articles by title and author, select specific year and issue, and browse

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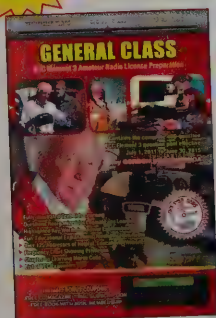
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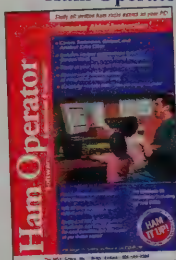
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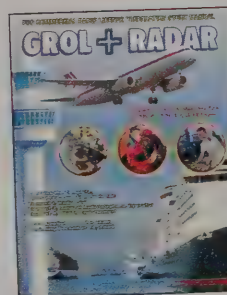
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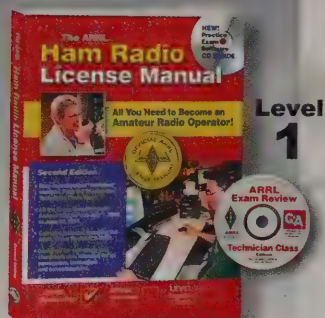
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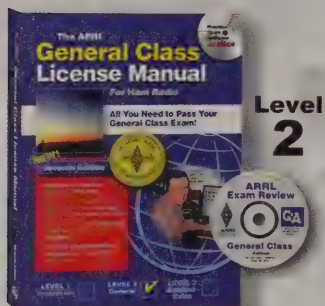
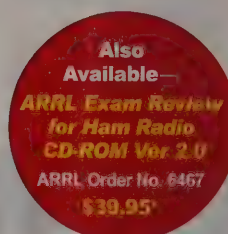
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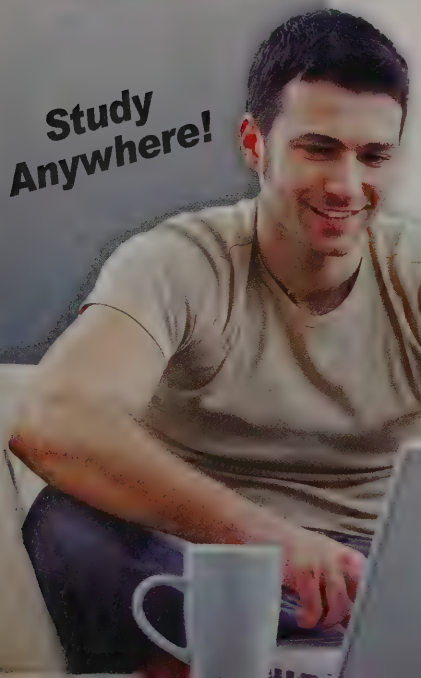
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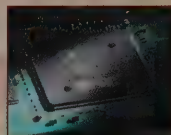
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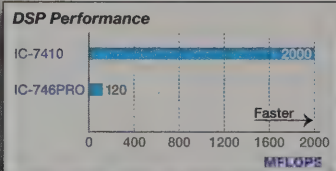
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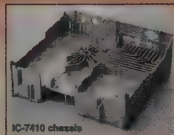
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Display color (Umber or Light Blue) may be selected at the time of purchase. Modification from 200- to 400-Watt version not available.



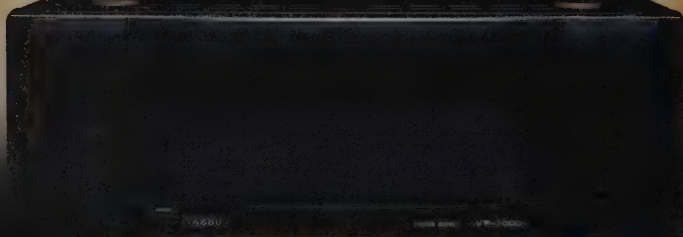
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**Loaded with Leading-edge Performance Capabilities. . .
The First Triumph in the 2nd Generation of the FT DX 9000 Lineage:
The Powerful FT-2000!**



**HF/50 MHz Transceiver
FT-2000**
100 W Version (Internal Power Supply)

DMU-2000
Data Management Unit

Photograph shows 100-Watt version.
Computer display and keyboard are after-market
items, not supplied with the FT-2000.



**HF/50 MHz Transceiver
FT-2000D**
200 W Version
(External Power Supply)

Options



SP-2000
External Speaker
with Audio filters

RF μ -Tune Kits

**160m Band
RF μ -Tune Kits A**



**80/40m Band
RF μ -Tune Kits B**



**30/20m Band
RF μ -Tune Kits C**



• Up to three μ -Tune Kits
may be connected.
• μ -Tune Kit is included in
purchase price of μ -Tune Unit.

"The Best of the Best Just Got Better"

Introducing the new FT-2000 Series with PEP-2000 (Performance Enhancement Program)

For the latest Yaesu news, visit us on the Internet:
<http://www.yaesu.com>

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**Vertex Standard
US Headquarters**
6125 Phyllis Drive
Cypress, CA 90630 (714) 827-7600

The Hottest Field Gear Anywhere!



**HF/VHF/UHF Portable Operation
Just Got a Lot More Powerful!**

FT-897D **TCXO** **DSP** **60 m Band**

HF/50/144/430 MHz

100 W All Mode Transceiver (144 MHz 50 W/430 MHz 20 W)




**HF/VHF/UHF Multimode Mobile Transceiver,
now Including Built-in DSP**

FT-857D **DSP** **60 m Band**

HF/50/144/430 MHz


100 W All Mode Transceiver (144 MHz 50 W/430 MHz 20 W)



**Automatic Matching for
FT-897/857 Series Transceivers**

FC-40
Automatic-Matching 200-Memory
Antenna Tuner (160 m ~ 6 m Band)

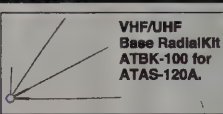
WATERPROOF



**Mobile Auto-Resonating 7-430 MHz for
FT-897/857 Series Transceivers**

ATAS-120A
Active Tuning
Antenna System
(no separate tuner
required)

VHF/UHF
Base Radial Kit
ATBK-100 for
ATAS-120A.



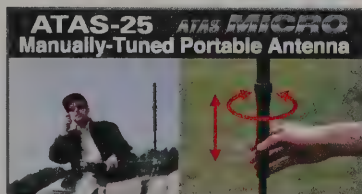


**REAL PERFORMANCE,
REALLY PORTABLE**

FT-817ND

HF/50/144/430 MHz
5 W All Mode Transceiver (AM 1.5 W)

60 m Band



ATAS-25 ATAS MICRO
Manually-Tuned Portable Antenna

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Introducing the Yaesu FT-950 transceiver for DX enthusiasts

Superb receiver performance

Direct lineage from the legendary FT dx 9000 and FT-2000



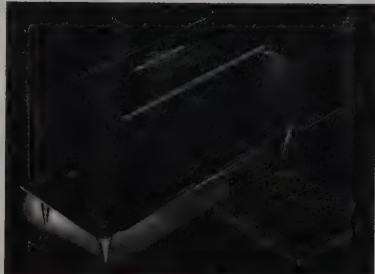
HF/50 MHz 100 W Transceiver FT-950

- Triple-conversion super-heterodyne receiver architecture, using 69.450 MHz 1st IF
- Eight narrow, band-pass filters in the RF stage eliminate out of band interference and protect the powerful 1st IF
- 1st IF 3 kHz Roofing filter included
- High-speed Direct Digital Synthesizer (DDS) and high-spec Digital PLL for outstanding Local Oscillator performance
- Original YAESU IF DSP advanced design, provides comfortable and effective reception. IF SHIFT / IF WIDTH / CONTOUR / NOTCH / DNR
- DSP enhancement of Transmit SSB/AM signal quality with Parametric Microphone Equalizer and Speech Processor
- Built-in high stability TCXO (± 0.5 ppm after 1 minute @ 77 ° F)
- Built-in automatic antenna tuner ATU, with 100 memories
- Powerful CW operating capabilities for CW enthusiasts
- Five Voice Message memories, with the optional DVS-6 unit
- Large Multi-color VFD (Vacuum Fluorescent Display)
- Optional Data Management Unit (DMU-2000) permits display of various operating conditions, transceiver status and station logging.
- Optional RF μ -Tune Units for 160 m, 80/40 m and 30/20 m Bands

Optional, YAESU Exclusive, Fully-Automatic μ -Tuning Preselector System!

Fully automatic, Ultra-sharp, External μ -Tuning Preselector (optional) features a 1.1" (28 mm) Coil for High Q

On the lower Amateur bands, strong signal voltages impinge on a receiver and create noise and intermod that can cover up the weak signals you're trying to pull through. YAESU engineers developed the μ (Mu) Tuning system for the FT dx 9000/FT-2000, and it is now available as an option for the FT-950. Three modules are available (MTU-160, MTU-80/40, MTU-30/20); these may be connected externally with no internal modification required! When μ -Tuning is engaged, the VRF system is bypassed, but the fixed Bandpass Filters are still in the received signal path.



Optional External Data Management Unit (DMU-2000) Provides Many Display Capabilities

Enjoy the ultimate in operating ease by adding the DMU-2000! Enjoy the same displays available with the FT dx 9000 and FT-2000: Band Scope, Audio Scope, X-Y Oscilloscope, World Clock, Rotator Control, Extensive Transceiver Status Displays, and Station Logging Capability. These extensive functions are displayed on your user-supplied computer monitor.



Shown with after-market keyer paddle, keyboard, and monitor (not supplied).



DMU-2000
Data Management Unit (option)

"The Best of the Best Just Got Better"

Introducing the new FT-950 Series with PEP-950 (Performance Enhancement Program)

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A Radio For Every Need Yaesu VHF/UHF Handhelds & Mobiles

Commercial Grade Field Radio Submersible Construction



5 W Submersible
Full Featured 2 m Compact
FM Mono Band Handhelds
FT-270R 2 m
Mono Band

IPX7
3 Meter (10 ft) Subm. Cap.

5 W Submersible
Full Featured 2 m Compact
FM Mono Band Handhelds
FT-277R 70 cm
Mono Band

IPX7
3 Meter (10 ft) Subm. Cap.

Heavy-Duty FM Dual Band Mobile with Exceptionally Wide Receiver Coverage*



*108 to 520 MHz/ 700 to 999.99 MHz
(Cellular blocked)

DUALBAND 50 W 2 m/70 cm Dual Band FM Mobile
FT-7900R



55 W 2 m Ultra Rugged VHF FM Mobile
FT-1900R 2 m Band

75 W 2 m Heavy-Duty FM Mobile
FT-2900R 2 m Band

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5 W Ultra-Rugged, Submersible
6 m/2 m/70 cm Tri-Band FM Handheld
VX-7R/VX-7Rb 5 m/2 m/70 cm
Tri-Band
(220 MHz: 300 mW)

5 W Heavy Duty Submersible
2 m/70 cm Dual Band
FM Handheld (220 MHz: 1.5 W)
VX-6R 2 m/70 cm
Dual Band



5 W Heavy Duty 2 m/70 cm
Dual Band FM Handheld
FT-60R 2 m/70 cm
Dual Band

1.5 W Ultra Compact 2 m/70 cm
Dual Band FM Handheld
VX-3R 2 m/70 cm
Dual Band

5 W Full Featured 2 m Compact
FM Mono Band Handhelds
FT-250R 2 m
Mono Band



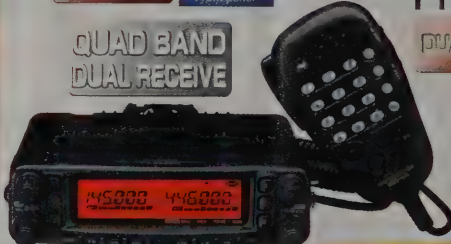
50 W 2 m/70 cm*
Dual Band FM Mobile
FTM-10R *70 cm 40 W

DUALBAND **IPX7**
Submersible
3 Meter (10 ft) Front Panel



10 W 2 m/70 cm*
Dual Band FM Mobile
FTM-10SR *70 cm 7 W

DUALBAND **IPX7**
Submersible
3 Meter (10 ft) Body/Front Panel



50 W 10 m/6 m/2 m/70 cm*
Quad Band FM Mobile
FT-8900R
*70 cm 35 W

DUAL BAND
DUAL RECEIVE



50 W 2 m/70 cm* Dual Band FM Mobile
FT-8800R *70 cm 35 W

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Vertex Standard US Headquarters
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Advanced Dual Band Mobile Radio

5.2" x 1.6" Large dot matrix (264 x 64 dots) LCD display

GPS / APRS® / Bluetooth® Features

FTM-350AR

New Vacuum Cup-Mounting Bracket permits Angle Adjustment
New APRS® Operation Capability, and newly Expanded User Friendly Functions



144/(220)* / 430 MHz 50 W FM Dual Band Transceiver

FTM-350AR **NEW**

220 MHz 1 W (USA version only)

New Features of The FTM-350AR

1. New Vacuum Cup-Mounting Bracket with Angle Adjustment

The new MMB-98 Mounting bracket allows easy installation of the radio control display to your Dashboard by placing the vacuum mount in the desired location and pressing a lever. You may then adjust the display to the optimum viewing angle.



2. Expanded APRS® functions

- Uses the worldwide-accepted GPS NMEA data format
- Navigation to another APRS® BEACON station is possible, even if the beacon station is moving.
- Waypoint data (Data in/out) is available from the ACC connector on the rear of the main unit.
- Sub-Band APRS® operation may be active in the background, even when operating in Mono-Band Display mode.
- Newly added Voice Alert function
- Re-allocated often used keys to more convenient positions for easier operation
- Programmable keys on the DTMF Microphone provide direct access to APRS® functions

*APRS® is a registered trademark of Bob Bruninga WB4APR
*SmartBeaconing™ from HamHUD Nichetronix

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A TECHNOLOGY BREAKTHROUGH

New Advanced VX-8 Series GPS/APRS® Handheld Transceivers

Choose the Yaesu that meets your APRS® operating preferences in the field

50/144/(222)/430 MHz
FM 5 W/AM 1W (50 MHz) Triple Band Handheld
VX-8DR * 222 MHz/1.5 W (USA version)
(7.4V 1,100 mAh Lithium Ion battery/FNB-101LI and
battery charger/NC-86A included)

144/430 MHz
FM 5 W Dual Band Handheld
VX-8GR
(7.4V 1,100 mAh Lithium Ion battery/FNB-101LI and
battery charger/NC-86A included)



Actual Size



Actual Size

VX-8DR NEW

All-in-one Prestigious Tri-band Transceiver

Bluetooth® for hands-free Operation with optional accessories

Waterproof/Submersible IPX 7 rated - 3 ft for 30 minutes



Optional GPS and antenna unit for GPS/APRS operation



The optional GPS Antenna Unit FGPS-2 attached to the optional speaker microphone MH-74A2A



Bluetooth

Attached to the radio (microphone input) using the optional GPS Antenna Adapter CT-136

VX-8GR NEW

144/430 MHz Dual Band Transceiver with GPS unit included

Built-in GPS Antenna - Waterproof

Wide Band Receive for 108-999 MHz (Cellular blocked - US Version)

Supports APRS® communication by the Built-in Worldwide Standard AX.25 Data TNC

The VX-8 series radios are compatible with the world wide standard APRS® (Automatic Packet reporting System) using the GPS system to locate and exchange position information.

- SmartBeaconing™ Function
- Memories to list 50 stations
- Memories to store 30 APRS® messages
- DIGI-PATH routing indication function
- 8 DIGI-PATH routing settings

- GPS Compass Display - "Heading Up" or "North Up"
- APRS® Symbol Icon pre-set function
- Clearly displayed APRS® Beacon Messages
- Selective Message Received indicated by Flashing LED

APRS® is a registered trademark of Bob Bruninga WB4APR. SmartBeaconing™ from HamRadioNiche.com.

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Vertex Standard US Headquarters
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Heavy-Duty FM Dual Band Mobile with Exceptionally Wide Receiver Coverage*

*108 to 520 MHz/ 700 to 999.99 MHz (Cellular blocked)

- Large Backlit LCD Display for easy operation
- Stable RF Power (50 Watts VHF / 45 Watts UHF)
- Reliable performance in harsh environments
- 5 ppm Frequency Stability (-4° F to +140° F)
- 1000 Memory Channels for serious users
- Yaesu Unique Power Saving Circuit Design Minimizes Vehicle Battery Drain



Actual Size

NEW

2 m/70 cm DUAL BAND FM TRANSCEIVER

FT-7900R

Size: 5.5" (W) x 1.6" (H) x 6.6" (D) / Weight: 2.2 lb

2 m/70 cm
DUAL BAND

• Separation Kit for Remote Mounting
(optional separation kit YSK-7800 requires)

YAESU
Chief of the World's top DXers

**Vertex Standard
US Headquarters**

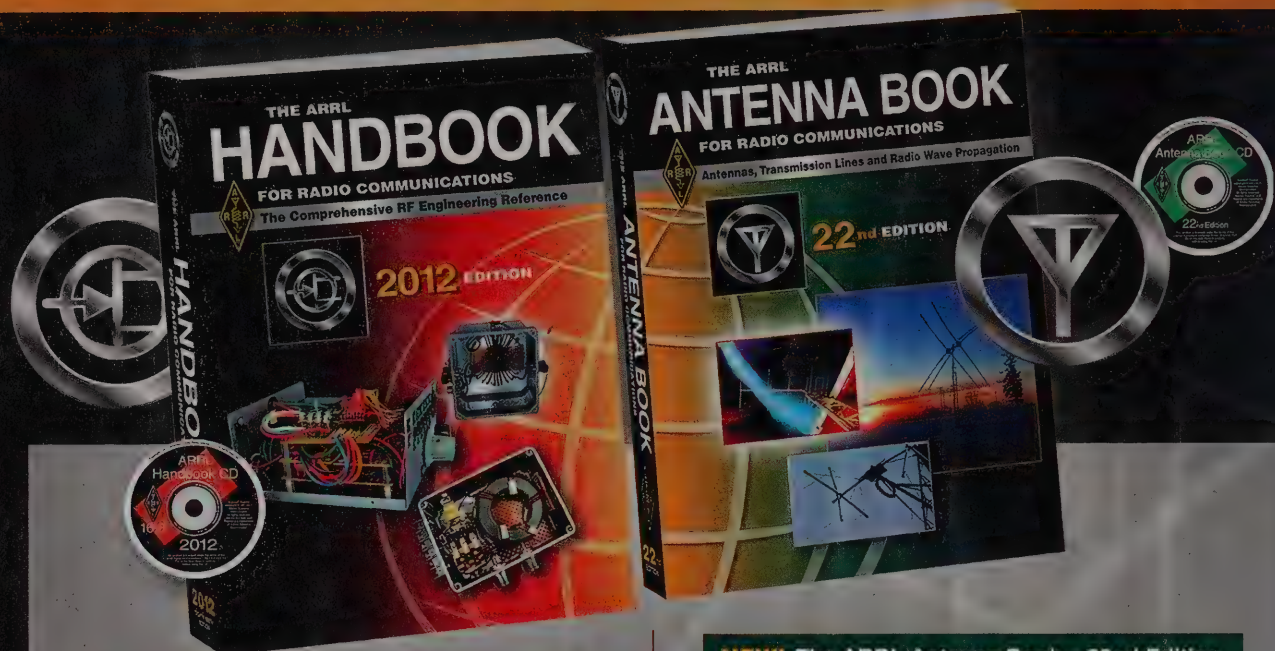
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Two Must-Have New Editions Available from ARRL!



NEW! The ARRL Handbook—2012 Edition

The ARRL Handbook for Radio Communications has kept technologists—amateur, professional and students—immersed in the radio art for generations. It has maintained its place at the forefront—a single resource covering electronic fundamentals, radio design, and loads of practical treatments and projects.

Updated and Revised! This eighty-ninth edition includes something for every radio amateur and experimenter:

- New **Test Equipment and Measurements** chapter
- New projects, including **High-Power RF Samplers**, **RF Current Meter**, and a **Two-Tone Audio Oscillator** from the ARRL Lab
- Updated **Elsie™** filter design software
- ...and more!

Fully-searchable CD-ROM included!

Hardcover Handbook 2012 Edition.
Book with CD-ROM.....Retail **\$59.95**

Softcover Handbook 2012 Edition.
Book with CD-ROM.....Retail **\$49.95**

CD-ROM System Requirements: Windows® 7, Windows Vista®, or Windows® XP, as well as Macintosh® systems, using Adobe® Acrobat® Reader® software. The Acrobat Reader is a free download at www.adobe.com. PDF files are Linux readable. The ARRL Antenna Book utility programs are Windows® compatible, only. Some utilities have additional limitations and may not be compatible with 64-bit operating systems.

NEW! The ARRL Antenna Book—22nd Edition

The ARRL Antenna Book for Radio Communications includes all the information you need for complete antenna systems—from planning, to design and construction. Extensively revised, it includes antennas from the HF low bands through VHF, UHF and microwave; fixed station, portable, mobile, maritime, satellite and more!

New and Improved! This edition includes a complete reorganization, new content, and exciting new antenna projects:

- Every chapter updated or completely rewritten
- New designs, including a **C-pole ground-independent HF antenna**, a **40 meter Moxon beam**, and **half-element designs for Yagis**
- Updated **EZNEC-ARRL** version 5.0 antenna modeling software
- ...and more!

Fully-searchable CD-ROM included!

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Book with CD-ROM.....Retail **\$59.95**

Softcover Antenna Book 22nd Edition.
Book with CD-ROM.....Retail **\$49.95**



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SWR / WATT METERS

DIAMOND

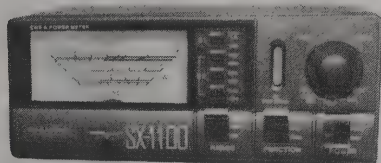
SWR / Watt Meters



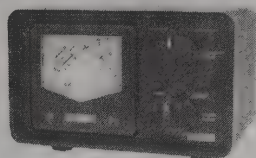
SX-40C

Diamond RF SWR / Watt meters cover the full range of amateur applications.

The SX-20C and SX-40C are the newest models. The SX-40C can be used on 220 MHz with a correction factor.



SX-1100



SX-240

All models:

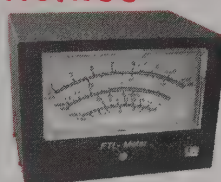
- Illuminated meters.
- Require 12 volts DC.
- Low insertion loss generally less than 0.2 dB in HF range and 0.3 dB at higher frequencies.
- Power measurement accuracy is generally $\pm 10\%$ on the higher power ranges and $\pm 5\%$ on the lower.
- Low loss SO-239 connectors are used except for the high frequencies as noted in the table.
- Measurements are forward power, reflected power, SWR &, on selected frequencies, PEP monitor.

Diamond Meters

Model	Freq MHz	Power Ranges	Con- nector	HRO Price
SX-20C	3.5-30 50-54 130-150	30/300 W	SO-239	\$89.95
SX-40C	144-470	30/300 W	SO-239	\$79.95
SX-100	1.6-60	30/300/ 3KW	SO-239	\$129.95
SX-200	1.8-200	5/20/ 200 W	SO-239	\$89.95
SX-240	3.5-30 50-54 130-150 430-450	30/300/ 3KW	30/300/ 3KW	\$299.95
SX-400	130-150	5/20/ 200 W	SO-239	\$109.95
SX-600	1.8-160 140-525	5/20/ 200 W	SO-239	\$179.95
SX-1100	1.8-160 430-450 800-930 1230-1300	5/20/ 200 W	SO-239 Type N Type N Type N	\$199.95

LDG ELECTRONICS

FTL
for the Yaesu
FT-897 / 857



The large, easy-to-read FTL-Meter is a plug-and-play solution to all your metering needs for the FT-857(D) and FT-897(D) transceivers. Attach to the meter jack at the front of the rig. LDG's new version presents a lush, highly readable 4.5 inch meter face with calibrated scales for signal strength and discriminator reading on receive, power output, SWR, modulation, ALC action and supply voltage on transmit. Functions are selectable from the radio's menu. **HRO Price \$79.95**

FT Meter – Blue

for the Yaesu
FT-897 / 857

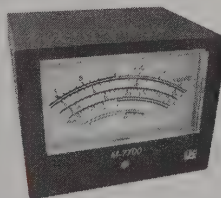
(radio not included)



LDG's FT-Meter has a highly readable 2.5" meter face

with calibrated scales for signal strength and discriminator reading on receive, power output, SWR, modulation, ALC action and supply voltage on transmit. Each function is selectable from the radio's menu. Easily visible from anywhere on your desk or dash, the FT-Meter is illuminated by any external 12 vdc source. It comes fully assembled and ready to go; just plug it into the radio. **HRO Price \$49.95**

M-7600
for the Icom
IC-7600

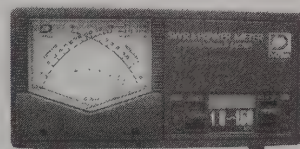


This 4 1/2" meter for the IC-7600 will display S-meter on receive or power out, SWR, ALC level or supply voltages – selectable from the rig's setup menu. The M-7600 and the virtual meter on your radio can work together; e.g. display SWR on the radio's meter and power output on the M-7600. The meter face is backlit in cool LED blue, powered by any 12 volt, 250 ma source. There's a brightness control on the case back. The meter itself is passive; it doesn't require the 12 volt supply. Calibration adjustments are accessible from the back of the M-7600. It comes fully assembled and calibrated. Radio and power cables are included. It carries LDG's two year, fully transferable warranty. **HRO Price \$79.95**

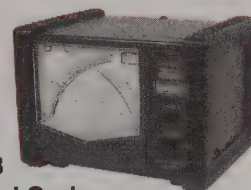
DAIWA

CN-101

- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- Easy to read meter.
- PEP monitor function
- Illuminated meter, 12vdc plug provided.



CN-101	
Frequency	1.8 - 150 MHz
Power Range	15 / 150 / 1.5 KW
Power Rating	1.5 KW (1.8-60 MHz) 1 KW (144 MHz)
SWR Detection	4 W minimum
HRO Price	\$99.95



CN-801HP3 Professional Series

HRO Price \$199.95

- Easy to read, illuminated, extra large meter face with mirrored graph in .5 watt increments.
- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- CN-801HP3 is the New 3000 Watt version.
- Illuminated meter, 12 vdc plug provided.

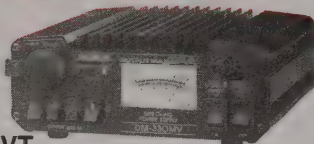
Daiwa 801 Meters

	CN-801 HP	CN-801 V	CN-801 S-II
Frequency	1.8-200 MHz	140-525 MHz	900-2500 MHz
Power Range FWD	20 / 200 / 2 kW	20 / 200 W	2 / 20 W
Impedance	50Ω	50Ω	50Ω
Connectors	SO-239	SO-239	N-Type
SWR Detection	5 W minimum	5 W minimum	0.5 W minimum
HRO Prices	\$159.95	\$149.95	\$279.95

POWER SUPPLIES



Switching Power Supply



DM-330MVT

Super compact, lightweight power supply is great for portable operations. Provides 32 amps peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit moves pulse noise. Short circuit protection. Convenient front panel connections Cigarette plug socket.

HRO Price \$Call



DM-340MVT

The DM-340 MVT delivers high quality, steady DC at a maximum of 35 A (30A continuous) with a reliable protection circuit. Features V/A twin meters, forced air cooling fan, 16mm main terminals, 2 pairs of auxiliary snap-in and cigar socket output terminals and a fuse socket on the front panel. HRO Price \$Call

DIAMOND



Switching Mode DC Power Supply GZV4000

The GZV4000 switching mode DC power supply has a 40 amp continuous rating at 100% duty cycle. The supply has variable voltage from 5-15 VDC using a voltage control knob with a center detent at 13.5 VDC. There is overload and short circuit protection with current feedback at approximately 42 amps and temperature protection with a variable speed fan. An AC line filter provides EMI protection. The meter selector allows monitoring of voltage and current. Power and overload indicators are included.

Connect your rig easily with front panel DC terminals and a cigarette lighter jack. The unit has in internal 8 ohm speaker. Operates on 120 VAC $\pm 20\%$, 50-60 cps. Ripple and noise is less than 8mV rms. HRO Price: \$169.95

240 VAC models also available for GZV4000.

GZV6000

60 amp version. 100V-240V HRO Price: \$399.95



All of Astron's solid-state electronically regulated Power Supplies have fold-back current limiting to protect from excessive current and a heavy duty heat sink. Output voltage: 13.8 VDC ± 0.05 volts. 220 V supplies available on special order at slightly higher price.

RS-A Series Standard power supply with on / off switch. Adjust voltage internally.

SL Series Slim Line design for low-profile looks.



MODEL RS-35M

RS-M Series Power supplies with front meters. One is for voltage and the other current.

SS Series High efficiency switching supplies specially filtered for use with communications equipment for all frequencies including HF. Heavy duty design, low profile, light weight and EMI filter.

VS-M Series Variable power supplies with separate volt and amp meters. Adjustable output: 2-15 volts.

RM Series 19" x 5 1/4" rack-mount power supplies available with or without meters and may be variable. The new RM-60 comes with or without meters.

Power Supplies

Brand	Model	Cont.Duty 13.8 VDC	Intermit Duty	Height in	Width in	Depth in	Weight lbs
Alinco	DM-330MVT	30 A	32A	2.75	7	7	5
Astron	RS-4A	3 A	4 A	3.75	6.5	9	5
	RS-7A	5 A	7 A	3.75	6.5	9	9
	RS-10A	7.5 A	10 A	4	7.5	10.75	11
	RS-12A	9 A	12 A	4.5	8	9	13
	RS-20A	16 A	20 A	5	9	10.5	18
	RS-35A	25 A	35 A	5	11	11	27
	RS-50A	37 A	50 A	6	13.75	11	46
	RS-70A	57 A	70 A	6	13.75	13.75	48
	RS-12M	9 A	12 A	4.5	8	9	13
	RS-20M	16 A	20 A	5	9	10.5	18
	RS-35M	25 A	35 A	5	11	11	27
	RS-50M	37 A	50 A	6	13.75	11	46
	RS-70M	57 A	70 A	6	13.75	12.12	48
	RM-50A	37 A	50 A	5.25	19	12.5	50
	RM-60A	50 A	55 A	7	19	12.5	63
	RM-35M	25 A	35 A	5.25	19	12.5	38
	RM-50M	37 A	50 A	5.25	19	12.5	50
	RM-60M	50 A	55 A	7	19	12.5	63
	VS-20M	16 A	20 A	5	9	10.5	20
	VS-35M	25 A	35 A	5	11	11	29
	VS-50M	37 A	50 A	6	13.75	11	46
	SL-11A	7 A	11 A	2.75	7.62	9.95	11
	SL-15R	12 A	15 A	2.75	7.62	9.95	14
	SS-10	7 A	10 A	1.125	6	9	3.2
	SS-12	10 A	12 A	1.375	6	9	3.4
	SS-18	15 A	18 A	1.375	6	9	3.6
	SS-25	20 A	25 A	2.875	7	9.375	4.2
	SS-30	25 A	30 A	3.75	7	9.625	5
Diamond	GZV4000	40 A	42 A	4.5	8.25	13	8
	GZV6000	60 A		4.5	8.25	13	8
Diawa	SS-330W	30 A	33 A	4	5	11	4.8
	SS-505	50 A	55 A	4.3	8.5	11	8.25
	PS-125	25 A	25 A	3.7	4.4	11.3	6.6
	PS-126	26 A	26 A				
Kenwood	KPS-15	20 A	23 A	2.38	7.1	8.88	4.5
Power Werx	SS-30DV	25A	30 A	2.5	5	6.1	3
Samlex	SEC1212	10 A	12A	2.2	7	8.25	3
	SEC1223	23 A	24 A	2.2	7	8.25	4
	SEC1235	30 A	35 A	2.1	10.4	7.1	5
	SEC1235M	30 A	35 A	2.1	10.4	7.1	5
Yaesu	FP-1023	23 A		2.25	6	8.25	4.2
	FP-1030A	25 A	30 A				

* Internal Supply

(220 volt versions of some models available at additional cost by special order. Contact HRO for details.)

POWER SUPPLIES

Rig-Matching Power Supplies

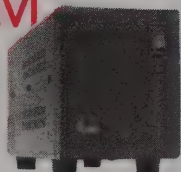
TOKYO
HY-POWER



HP-460

The HP-460 is a matching power supply for the HL-450B and HL-350V DX amplifiers. It features a light weight design with 60A maximum (8 hours continuous). It operates on 100-140 VAC. **HRO Price \$CALL**

ICOM



PS-125

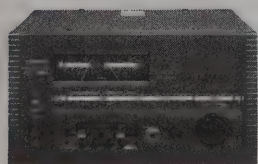
This is the matching supply for the IC-756PRO. It will work with all Icom HF radios. 25A continuous switching supply. Optional adapter cable available. **HRO Price \$CALL**



PS-126

Matching supply for IC-7600. **HRO Price \$CALL**

YAESU



FP-1030A

Yaesu has power supplies primarily designed for use with their HF rigs. These include the FP-1023 and the FP-1030A and are low profile switching supplies. **HRO Price \$CALL**



samlexamerica

Switching Supplies

THE "Power supply choice of radio manufacturers worldwide"

SEC-1235M

This unit includes built-in volt and amp meters. 100-130 VAC, 13.8 VDC.

- Best power supply value available today.
- 30 amps continuous, 35 amps intermittent.
- **3 year warranty** - "no questions asked."
- UL + cUL Safety approved. FCC compliant.
- Thermal activated fan.

No hash.

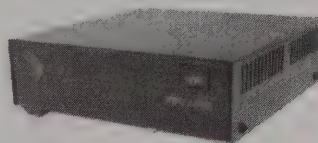
- Fully protected - voltage / current / short-circuit.
- Perfect for all 100-200 watt applications.
- Dim 7" w x 2.1" h x 7.1" d; 4.5 lbs. **HRO Price \$139.95**



SEC-1235

Same as the 1235M above, but without volt and amp meters.

HRO Price \$129.95



For Base Stations

Switching Mode Power Supplies

SEC-1223

23A Switching PS

The perfect lightweight companion for 100 Watt transceivers. Input 100-130VAC; Output: 13.8VDC @ 23 Amps; UL approved. Also works on 200-240VAC input with a simple jumper change. Safety features: Current limiting; Short circuit protection; Overvoltage protection; Quiet temperature controlled cooling fan.

- 3 year warranty - "no questions asked."
- Dim 7" w x 2.1" h x 7.1" d; 4.5 lbs. **HRO Price \$99.95**

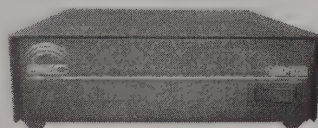


SEC-1212

12A Switching PS

Same size as the 1223, this model is highly filtered to provide clean power to HF, VHF and UHF radios. Input: 100-130VAC; Output: 13.8 VDC @ 12 Amps; UL approved. Also works on 200-240VAC input with a simple jumper change. Safety features: Current Limiting; Short circuit protection; Overvoltage protection; Quiet temperature controlled cooling fan.

- 3 year warranty - "no questions asked."
- Dim 7" w x 2.1" h x 7.1" d; 4.5 lbs. **HRO Price \$89.95**



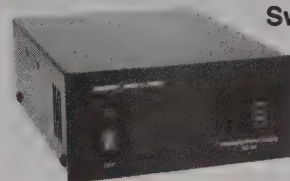
DC to AC Inverters

Samlex provides a collection of **pure sine wave converters**, from 12 VDC to AC. These products have less than 3% total harmonic distortion and they have a 2 year guarantee.

PST-30S 12A	\$189.95
PST-60S-12A	\$229.95
PST-100S-12A	\$399.95

Switching Supplies

power.werx.com



Switching Power Supply
25 A

SS-30DV

NEW!

The power supply is set up for 230 V AC input as shipped from the factory. For 115 V AC applications, set the recessed 115 / 230 input select switch located on the rear of the power supply into the proper position. Positions are identified on the switch. Use a small screwdriver to slide the switch into position. No adjustment is necessary for either 50 or 60 Hz input.



DAIWA

Daiwa switching power supplies are one-third the weight and one-half the size of conventional supplies. Daiwa models can be used for DC motors that require

peak starting currents and will accept input voltage from 90-130V. Switching supplies can create pulse noise, but Daiwa engineers have isolated any noise and moved it out of the amateur bands creating a super quiet power supply.

SS-330W: 30 amp

- 30 amps continuous voltage (33 peak).
 - Voltage adjustable: 5-15V.
 - Dual meters, amp and voltage.
 - Automatic cooling fan built in.
 - Weight: ONLY 4 lbs 14 ozs.
 - Dimensions: 5" x 4" x 11" (approx).
 - Ripple voltage: less than 10 mV.
 - Short circuit protected.
 - Carry handle for portability.
- HRO Price \$169.95**

SS-505: 50 amp

- 50 amps continuous voltage (55 peak).
 - 50 amps available at all output voltages.
 - Voltage adjustable: 5-15V.
 - Binding posts on back, cigarette-lighter front socket, spring loaded connectors on front.
 - Voltage fluctuation: less than 1.5%.
 - Dual purpose meter - amp and voltage.
 - Automatic cooling fan built in.
 - Weight: ONLY 8 lbs 4 ozs.
 - Dimensions: 8.5" x 4.3" x 11" (approx).
 - Ripple voltage: less than 5 mV.
 - Short circuit protected.
 - Carry handle for portability.
 - Perfect for industrial, lab, or ham use.
- HRO Price \$399.95**



BATTERY PACKS / CHARGERS

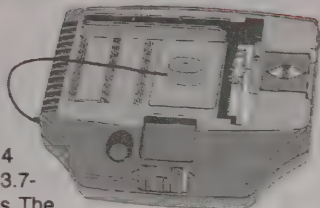
MH-C777Plus III Universal Charger

Expected Winter 2011

NEW!

\$CALL

The MH-C777 Plus will charge NiMH (4.8-14.4 V) and Li-ion (3.7-7.2 V) batteries. The

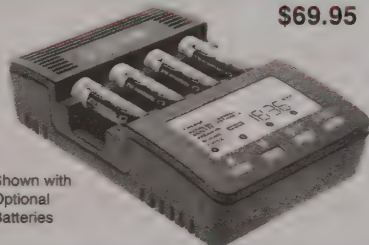


max charge rate for NiMH is 1000 mAh and 600 mAh for Li-ion. The rate is adjustable at 25%, 50% and 100% of the max charge rate. It features refresh mode, temperature detection, timer limit, -dT detection, zero dT detection, and an LCD display which shows voltage, capacity and time.

MH-C9000

WizardOne Charger-Analyzer

\$69.95



Shown with
Optional
Batteries

This charger features 4 independent slots, a large backlit LCD display, and endless programming possibilities. There are 5 modes of operation: Charge; Refresh & Analyze; Break-in; Discharge and Cycle. Use the charger for battery matching. Battery matching refers to grouping batteries with similar "actual" capacity for best performance when used together. Use the Battery Forming to force a full charge into a new or fully discharged battery by charging at a very slow rate. It comes with a light worldwide power supply and is 12VDC compatible.

MH-C801D

8-Cell One Hour Charger

\$59.95



Shown with
Optional Batteries

- * Eight independent charging circuits. Charge 1 to 8 batteries. Mix rechargeable AA/AAA batteries.
- * LCD display shows charging and conditioning status in English.
- * Precision microprocessor controlled 0.001 V voltage detection. No under-charge. No over-charge.
- * Selectable soft and rapid charge modes soft charge option for highest battery life. Rapid charge option for shortest charge time.

Model	Description	HRO Price
MH-C9000	WizardOne Charger-Analyzer	\$59.95
MH-C801D	8 Cell 1-hour Charger	\$59.95
MH-C808M	Ultimate Professional Charger for Eight AA/AAA/C/D NiMH/NiCD	\$99.95

NiMH Ham Radio Battery Packs

Model	Volts (Vdc)	Capacity (Mah)	Compatible Handheld	HRO Price
MH-FNB-12	12	1000	Yaesu FT-470, 411, 811, 23R, 33R	\$59.95
MH-FNB-17	7.2	1000		\$34.95
MH-FNB-27	12	1000	Yaesu FT-530, 76, 415, 815, 729	\$49.95
MH-FNB-31	4.8	650	Yaesu FT-51R, 41, 11	\$49.95
MH-FNB-38	9.6	650		\$59.95
MH-FNB-41	9.6	1800	Yaesu FT-50R, 40, 10	\$55.95
MH-FNB-V47	7.2	1800		\$69.95
MH-FNB-V57	7.2	1500	Vertex VX-400, VX-210	\$49.95
MH-FNB-58LI	7.4	1200	Yaesu VX-5R, VX-7R	\$59.95
MH-FNB-72	9.6	1700	Yaesu FT-817	\$59.95
MH-FNB-80LI*	7.4	1400	Yaesu VX-6R, VX-7R (lithium)	\$59.95
MH-FNB-83	7.2	1650	Yaesu VX-150, VX-170, FT-60R	\$59.95
MH-BP-7	13.2	1000	Icom 2GA, 2AT, 4GAT, 12GAT	\$69.95
MH-BP-8	8.4	1200	Icom 2GA, 2AT, 4GAT, 12GAT	\$51.95
MH-BP-8H	8.4	1800		\$59.95
MH-BP-83	7.2	1300	Icom W2A, 4SA, 2-3-24SAT	\$39.95
MH-BP-132G	12	1300	Icom W21, 2GXAT, V21AT Gray	\$59.95
MH-BP-132B	12	1300	Icom W21, 2GXAT, V21AT Black	\$59.95
MH-BP-173	9.6	650	Icom W31, W32, T7A, T22, T44, Z1A	\$69.95
MH-BP-180	7.2	1000		\$49.95
MH-BP-196SM	9.6	1350	Icom T2A, T2H	\$49.95
MH-BP-199	6	700	Icom T8A, T81	\$55.95
MH-BP-200	9.6	680		\$49.95
MH-BP-211LI	7.4	1800	Icom -V82, IC-U82	Call
MH-PB-8	12	1300	Kenwood TH77, 450T, 55AT, 26, 75	\$62.95
MH-PB-17	12	1300		\$69.95
MH-PB-18	7.2	1300	Kenwood TH-27, 247, 28, 48	\$49.95
MH-PB-32	6	1000		Call
MH-PB-34	9.6	1000	Kenwood TH-22, 42, 79AD	\$57.95
MH-PB-39	9.6	1050		\$59.95
MH-PB-39H	6	1800	Kenwood TH-G71A, D7	\$49.95
MH-PB-42LI*	7.4	1800		\$54.95

* Lithium

NiMH Rechargeable Battery Cells

Model	Volts (Vdc)	Capacity (Mah)	Description	HRO Price
MH-4AA270	1.24	2700	4 pack "AA" size NiMH Cells	\$14.95
MH-AAA1000	1.24	1000	2 pack "AAA" size NiMH Cells	\$6.99
MH-2C500	1.24	3800	2 pack "C" size NiMH Cells, 5000 mAh	\$19.95
MH-2D110	1.24	7500	2 pack "D" size NiMH Cells, 11000 mAh	\$33.95
MHR9V	9.6	230	9.6V NiMH Battery	\$12.92
MHR84V	8.4	300	8.4V NiMH Battery	\$13.99
MH-RAA14	1.24	2100	4 pack "AA" size NiMH Cells	\$13.95
MH-RAAA14	1.24	800	4 pack "AAA" size NiMH Cells	\$12.95

SOLAR POWER



Solsum Controllers



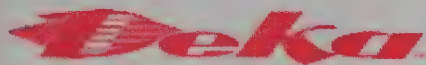
The Steca Solsum F-line continues to be a huge success as of one of the most used SHS controllers.

With a power range of up to 10A at automatically recognized 12 V or 24 V, it fits system sizes of maximum 240W. The circuit board is completely electronically protected. With the LED user interface, it is easy to check the battery state of charge at anytime. Large terminals guarantee a simple connection of solar panels, battery, and load. The Steca Solsum F works on PWM as a low loss series controller.

Solar Charge Controllers

Item	Model	Description	HRO Price
8725	Solsum 6.6F	12V/24V. 6 amps, with LVD Display	\$39.95
8726	Solsum 8.8F	12V/24V. 8 amps, with LVD Display	\$48.95
8727	Solsum10.10F	12V/24V. 10 amps, with LVD Display	\$64.95

Batteries



The valve-regulated, gelled-electrolyte Deka Solar batteries offer reliable, maintenance free power for renewable energy applications. All models 12 VDC. Sealed construction eliminates periodic watering, corrosive acid fumes and spills. The electrolyte will not stratify so no equalization is required. These batteries are rated non-spillable by ICAO, IATA and DOT. Safe to ship by truck or air.

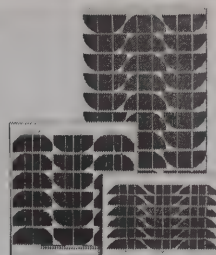
Deka Solar Batteries

Model	Capacity @ 100 Hr	Capacity @ 20 Hr	Size (inches)	Weight (pounds)
8GUI	36 Ah	31 Ah	7.75 x 5.13 x 7.25	24
8726	56.5 Ah	48 Ah	9.4 x 5.5 x 9.25	39
8727	98 Ah	86 Ah	12.75 x 6.75 x 9.87	64



OEM Solar Module Kits

The Solar Module Kits include a solar module, the SunWize SW-1L6 prewired voltage regulator with output cable and a fixed tilt, 45" side-of-pole mount. The waterproof controller has a multi-function LED indicator and fuse protection. 20 year warranty. OEM 5 and 10 kits include 5' cable and OEM 20 and 40 10' cable.



Kit Model	Rated Voltage	Rated Power	Open Circuit Voltage	Rated Current	Size (Inches)	Weight (lbs)	HRO Price
OEM5	16.4	5 W	20.5	.31 A	11.82 x 9.84	7	CALL
OEM10	16.4	10 W	21	.61 A	15.15 x 14.76	8.5	CALL
OEM20	16.5	20 W	21	1.22 A	20.86 x 16.93	12.5	CALL



samlexamerica

Solar Kits and Expansion Kits

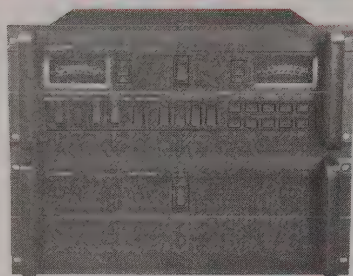
Samlex Solar Power kits charge and maintain your remote communication batteries using sustainable energy from the sun. Good for the environment and easy to install, your mobile solar system will pay for itself again and again, extending the life of your batteries and allowing you to power your favorite devices when you want, wherever you want!

Choosing a Samlex Solar kit is simple. Depending on how long your panels will be exposed to sunlight and the size of your battery (or battery bank), you can select a starter kit to get you going and then expand your system as required. For more charging power, simply add additional solar panels with Samlex Expansion Kits. A Samlex Solar Charge Controller (included in every Charging Kit) regulates current and protects your batteries from over charging. A single controller can manage up to 500 W in a 12 V system and up to 1000 W in a 24 V system.

Everything you need to install your plug and power solar charging system is included in one package. All Samlex kits come with an aluminum bracket flat mounting system and a pair of weather resistant solar connecting wires. All charging kits feature a 30 A flush mount 4 stage charge controller with LCD display and 8 charge settings for most battery types.

Samlex also offers a full range of DC-AC Power Inverters. Ask your dealer for more information on how Samlex Solar can help maintain your battery life, save you money, and provide you with clean and reliable power.

Item	Model	Description	HRO Price
18001	SRV-50-KIT	Solar Charging Kit. 50 watts. Kit contains: (1) 50 W Solar Panel, (1) 30 A Samlex Charge Controller, (1) Pair of 20 ft connecting wires, (4) mounting feet and hardware.	\$599.95
18002	SRV-85-KIT	Solar Charging Kit. 85 watts. Kit contains: (1) 85 W Solar Panel, (1) 30 A Samlex Charge Controller, (1) Pair of 20 ft connecting wires, (4) mounting feet and hardware.	\$749.95
18003	SRV-120-KIT	Solar Charging Kit. 120 watts. Kit contains: (1) 120 W Solar Panel, (1) 30 A Samlex Charge Controller, (1) Pair of 20 ft connecting wires, (8) mounting feet and hardware.	\$899.95
18004	SRV-EXP-50-KIT	Solar Expansion Kit 50 watts. Kit contains: (1) 50 W Solar Panel, (1) pair of 20 ft connecting wires, (4) mounting feet and hardware, (1) pair of branch connectors, (1) pair of MC4 connectors.	\$499.95
18005	SRV-EXP-85-KIT	Solar Expansion Kit 85 watts. Kit contains: (1) 85 W Solar Panel, (1) pair of 20 ft connecting wires, (4) mounting feet and hardware, (1) pair of branch connectors, (1) pair of MC4 connectors.	\$699.95
18006	SRV-EXP-120-KIT	Solar Expansion Kit 120 watts. Kit contains: (1) 120 W Solar Panel, (1) pair of 20 ft connecting wires, (8) mounting feet and hardware, (1) pair of branch connectors, (1) pair of MC4 connectors.	\$799.95



VL-2000

\$CALL - HRO Price

Yaesu's new amplifier is shown with its matching supplied power supply. Preliminary specs subject to change.

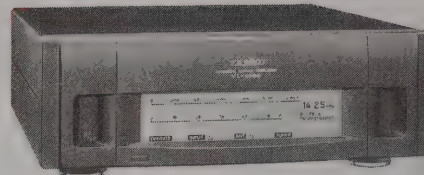


- VL-2000 requires the VP-2000 power supply.
- Antenna tuner built in.
- Frequency range 160-10 meter HF bands and 6m band.
- RF output with 100 W input: SSB / CW-1500 W (160m to 10m bands); 1000 W (6m band); 500 W (low). RTTY / FM - 500 W (low).

VP-2000 Power Supply

- Input AC voltage (50/60 Hz).
- 200 V - 264 V; 100 V - 132 V (500 W only).

The VL-2000 has not been approved by the appropriate authorities in each country. This device may not be sold or leased or be offered for sale or lease, until approval has been obtained. All stated features, appearances, and specifications may be subject to change without notice.



Quadra System

\$CALL - HRO Price

VAC or 220 VAC. Output power is a function of the

power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is reduced to 500 watts on HF. The Quadra is equipped with a built-in high speed tuner to match the amp to your antennas. It has four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

Here's the linear amp you need to operate on HF (160-15 meters) and 6 meters. It has automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990, and the FT-900 HF radios. The amp has 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC. The separate power supply, the VP-1000, allows easy installation. There are two input voltages, 117

Amplifier Specifications

Maker	Model	Frequency Range	Modes	Power In	Power Out	Voltage	Current	Pre-amp	Connector	Wgt	HRO Discount Price
Ameritron	AL-1500	160-15 M*	SSB, CW	65 W	1500+ W	220 VAC	15 A	-	SO-239	50 lbs#	CALL
	AL-1200	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	-	SO-239	50 lbs#	CALL
	ALS-500M	160-15 M*	SSB, CW	100 W	500 W	13.8 VDC	80 A	-	SO-239	7 lbs	CALL
	AL-572	160-15 M*	SSB, CW	100 W	1300 W	110/220 VAC	12 A 110V	-	SO-239		CALL
	ALS-600	160-15 M*	SSB, CW	100 W	600 W	110/220 VAC	16 A 110V	-	SO-239	13 lbs#	CALL
	AL-80B	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC	15/10 A	-	SO-239	54 lbs	CALL
	AL-800	160-15 M*	SSB, CW	100 W	750 W	110 VAC	12 A	-	SO-239	67 lbs	CALL
	AL-800H	160-15 M*	SSB, CW	55 W	1500 W	240 VAC	9 A	-	SO-239	69 lbs	CALL
	AL-811	160-15 M*	SSB, CW	75 W	600 W	110/220 VAC	8/4 A	-	SO-239	40 lbs	CALL
	AL-811H	160-15 M*	SSB, CW	75 W	800W	110/220 VAC	8/4 A	-	SO-239	41 lbs	CALL
Icom Mirage	AL-82	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	-	SO-239	52 lbs#	CALL
	IC-PW1	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC		-	SO-240	55 lbs	CALL
	A-1015G	50-54 MHz	All	10 W	150 W	13.8 VDC	23 A	yes	SO-239	5 lbs	CALL
	B-34	144-148 MHz	FM	2 W	35 W	12-15 VDC	4 A	-	SO-239	2 lbs	CALL
	B-34G	144-148 MHz	FM	2W	35 W	12-15 VDC	4 A	yes	SO-239	2 lbs	CALL
	BD-35	143-149/430-450	FM	7 W	45 W	12-15 VDC	7 A	-	SO-239	3 lbs	CALL
	B-310G	144-148 MHz	All	4 W	100 W	13.8 VDC	15 A	yes	SO-239		CALL
	B-1018G	144-148 MHz	All	10 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	CALL
	B-1030G	144-148 MHz	All	10 W	300 W	13.8 VDC	48 A	yes	SO-239		CALL
	B-2518G	144-148 MHz	All	25 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	CALL
	B-2530G	144-148 MHz	All	25 W	300 W	13.8 VDC	48 A	yes	SO-239	15 lbs	CALL
	B-5018G	144-148 MHz	All	50 W	160 W	13.8 VDC	24 A	yes	SO-239		CALL
	B-5030G	144-148 MHz	All	50 W	300 W	13.8 VDC	48 A	yes	SO-239		CALL
	C-22G	222-225 MHz	All	2 W	20 W	13.8 VDC	5 A	yes	SO-239	2 lbs	CALL
	C-211G	222-225 MHz	All	2 W	110 W	13.8 VDC	20 A	yes	SO-239	5 lbs	CALL
	C-1012G	222-225 MHz	All	10 W	120 W	13.8 VDC	5 A	yes	SO-239	5 lbs	CALL
	C-2512G	222-225 MHz	All	25 W	120 W	13.8 VDC	20 A	yes	SO-239	5 lbs	CALL
	C-2522G	222-225 MHz	All	30 W	200 W	13.8 VDC	42 A	yes	SO-239		CALL
	D-15N	425 - 450 MHz	All	2 W	15 W	13.8 VDC	3 A	-	N type		CALL
	D-26N	430-450 MHz	All	2 W	60 W	13.8 VDC	12 A	-	N type	2 lbs	CALL
	D-1010N	430-450 MHz	All	10 W	100 W	13.8 VDC	20 A	-	N type	5 lbs	CALL
	D-3010N	430-450 MHz	All	30 W	100 W	13.8 VDC	20 A	-	N type		CALL
	D-100-ATVN	429 MHz ATV	All	1 W	52 W	13.8 VDC	20 A	-	N type		CALL
	D-1010-ATVN	430 MHz ATV	All	10 W	100 W	13.8 VDC	20 A	-	N type		CALL
SGC	SG-500	160-15M*	All	1-150W	500 W	13.8 VDC	80-90A**	-	SO-239	21 lbs	CALL
Tokyo HyPower	HL-2.5KFX	160-10 M	SSB, CW	100 W	1500 W	200-240 VAC		-	SO-239	57.3 lbs	CALL
	HL-1.5KFX	160-10 M + 6 M	SSB, CW	85 W	1000 W	100/240 VAC		-	SO-239	45.5 lbs	CALL
	HL-1.2KFX	160-10 M	SSB, CW	90 W	750 W	100/240 VAC		-	SO-239	33 lbs	CALL
	HL-450B	160-10 M	SSB, CW, FM	50	400	13.8 VDC	60 A max	-	SO-239	11 lbs	CALL
	HL-45B	160-10 M + 6 M	SSB, CW, FM	5	45	13.8 VDC	8.5 A	-	SO-239	12.5 lbs	CALL
	HL-550FX	160-10 M + 6 M	SSB, CW	65-90	550	110/220 VAC	30 A max	-	SO-239	22.5	CALL
Yaesu	HL-350VDX	144-148 MHz	SSB, FM	10/25/50	330	13.8 VDC	45 A	-	SO-239	12 lbs	CALL
	Quadra System	160- 15 M* + 6 M	SSB, CW	100 W	1000 W	110/220 VAC	†	-	SO-239	21 lbs	CALL
	VL-2000**	160-10 M + 6 M	All	100 W	1500 W HF			-			CALL

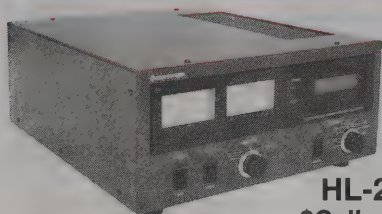
*Owner modifiable for 10 m #Add 35 pounds. Transformer shipped in separate package.

**SGC PS-50 recommended

†VP-1000 power supply inc.

***Preliminary specs subject to change.

HF Amplifiers


HL-2.5KFX
\$CALL - HRO Price

The HL-2.5KFX is a compact, light weight desk-top HF linear power amplifier with the maximum input power of 3 kW. It boasts of being smallest and lightest in the industry using our solid state broad band power amp technology.

Typical output power is 1.8 kW PEP / SSB (1.5 kW CW min.) on entire HF bands (slightly less on 10m) with the drive power of 80-95 W. The built-in band decoder will let you forget about the band setting when the amplifier is hooked to your modern radio through such band data cables as Icom CI-V, DC voltage (Icom, Yaesu), and RS-232C (Kenwood). There is a band data output socket to command the external auto antenna tuner, HC-1.5KAT.

Two pieces of extremely rugged high voltage RF power FET's of the latest design are used in push-pull form. 1,500 W of power dissipation and 500 V of breakdown voltage. Several protection circuits are built in such as over drive, high antenna SWR, thermal shutdown. Two large analog meters monitor Pf and Vd / Id / Pr. On the LCD panel meter are shown freq. band, heat sink temperature, mode of auto band setting, etc.

Options for HL-1.2 / 2.5KFX

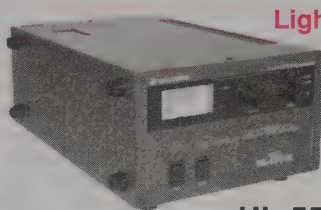
Call for Quotes

- **HXT-1.5KF** External fan kit for HL-1.5KFX.
- **YBC-1.5k/950** Band Cable for HL-1.5KFX to Yaesu FT-950.
- **EBC-2.5K/K3** Cable for HL-2.5KFX to K3.


IC-PW1
w/ Solid State Remote Control Head

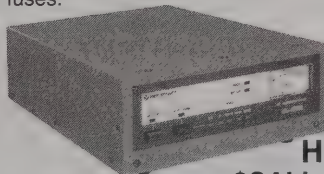

**HRO
Discount Price
\$CALL**

Icom's linear amp provides wide frequency coverage with up to 1kW output requiring only a 100-watt maximum input. The duty cycle is 100 percent with full break-in operation. It covers amateur bands 160 to 15 meters plus 6 meters. Includes an automatic antenna tuner for all bands. Internal circuitry allows the ALC to be adjusted over a wide range so the PW1 can be used with almost any rig, not just Icom. Operates on 110 or 220 VAC 50 or 60 cycle.


Light Weight
HL-550FX
\$CALL - HRO Price

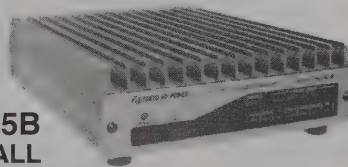
Great for DX-Peditions

The HL-550FX covers the 1.8-50 MHz amateur bands including the WARC bands. It supports SSB, CW with 550 watts out and and RTTY with 400 watts out. Input is 65 to 90 watts typical and 100 watts maximum. The input and output are 50 ohms unbalanced and it operates in class AB parallel push pull. Connectors are SO-239. The amp has forced air cooling. It features a built-in 110/220 switching power supply. Weighing only 22.5 pounds and small in size, it is great for DX-peditions. Accessories included are AC power cord, coax jumper with PL259s, 2 RCA plugs, and spare fuses.


HL-450B
\$CALL - HRO Price

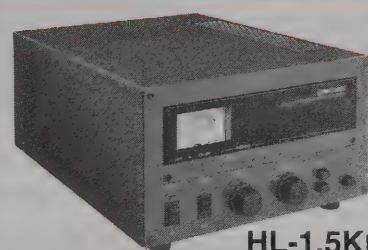
HF 400W Linear Power Amplifier

The HL-450B has a built-in auto band-select function using a newly developed microprocessor based technology that works a smooth automatic operation when driven by the radio. Manual band settings are also possible. Operation is possible from remote locations with the optional HRC-60. Smooth send/receive switching is possible through the hard-key terminal. ALC output is also provided. A number of circuits protect the amplifier. The amplifier operates on SSB, CW and FM with 400 W maximum output. Typical is 350 W. 50 W drive is required. Frequency coverage is 3.5 - 28 MHz including the WARC bands.


HL-45B
**\$CALL
HRO Price**

HF 45W Linear Power Amplifier

This amplifier covers 1.8 - 28 MHz plus 6 meters including the WARC bands. Modes include SSB, CW and FM. Output power is 45 W maximum with a drive of 5 W. The HL-45B has a built-in auto band-select function that interfaces with the Yaesu FT-817 QRP radio.


HL-1.5KFX
\$CALL - HRO Price

1.8 MHz - 29 MHz amateur bands including WARC bands plus 50 MHz, FCC certified, built-in power supply 110 or 220 VAC (240 V preferred). 10.7 x 5.6 x 14.4 inches, approx. 45 pounds. Fully solid state, auto-band switching with most Icom, Kenwood, Yaesu radios (cables included). Manual band switching as well. Two antenna ports selectable from front panel. Built-in RF power meter. HF 1 KW PEP SSB (typical). 6m 650 W PEP output. RF drive 85 W typical (100 W max). Great for DX-peditions or home station. External fan option for high duty cycle RTTY. Modes: SSB / CW / RTTY.

VHF Amplifier


HL-350VDX
\$CALL - HRO Price

VHF 330 W Amplifier

The HL-350VDX is a 144 MHz 330 W amp for RF drive of 10W, 25W and 50W. Multimeter for power out, auto SWR, DC line voltage. GaAs low noise RX pre-amp included. It covers 144-148 MHz on both FM and SSB. It requires 13.8 VDC at 48 A maximum (negative ground). The connectors are SO-239. There is protection for DC reverse polarity and high SWR. It features a terminal for the optional HRC-60 remote controller. The amp is 9.6 x 3.9 x 14 inches (WxHxD). Weight 12.5 pounds.

HRO will provide 10 meter modification information to amplifier customers upon receipt of a copy of your valid, current amateur radio license.

**Call for Quotes
on Amplifiers**

Automatic Antenna Tuners

MFJ-929. 200 Watt Automatic HF Antenna Tuner. Compact size 6-1/2 W x 2-7/8 H x 8-3/8 D inches.

Ultra-fast, 20,000 VirtualAntenna™ Memories, antenna switch, efficient L-network, matches 6-1600 Ohms, 1.8-30 MHz. Digital SWR / Wattmeter, radio interface.



MFJ-993B. 300 Watt Automatic HF Antenna Tuner.

Like MFJ-929, but you can select 300 Watts (6-1600 Ohms matching range) or 150 Watts (6-3200 Ohms matching range). Also has 4:1 current balun, remote control port.



MFJ-994B. 600 Watt Intelli-Tuner™. Like MFJ-993B, but has 10,000 VirtualAntenna™ memories and handles 600 Watts CW / SSB, matches 12-800 Ohms. Does not have LCD display, antenna switch or 4:1 balun.

MFJ-998. 1500 Watts SSB / CW Intelli-Tuner™.

Digital and analog SWR / Wattmeter, ultra-fast, automatic tuning, wide tuning range (12-1600 Ohms from 1.8 to 30 MHz), radio interfaces, built-in antenna switch for two coax / long wire, automatic bypass to protect your amplifier, field upgradeable software.



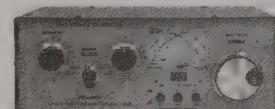
HF Roller Inductor Tuners



MFJ-989D. The world's most popular legal limit antenna tuner! Easily handles a full 1500 Watts SSB / CW,

1.8 to 30 MHz including MARS / WARC bands. 500 pF air variable capacitors, AirCore™ roller inductor with fast-tune crank knob, TrueActive™ peak-reading cross-needle SWR / Wattmeter, high voltage current balun, more! 12-7/8 W x 6 H x 11-5/8 inches.

MFJ-986. Similar to MFJ-989D, but has 2-knob tuning (differential capacitor and AirCore™ roller inductor) to make tuning fool-proof and easier than ever.



MFJ-962D. Handles 1.5 kW PEP SSB amplifier input power (800 W output).

Ideal for Ameritron's AL-811H! Peak-reading cross-needle SWR / Wattmeter, AirCore™ roller inductor.



MFJ-969. Covers 6 thru 160 meters! 300 Watts PEP SSB. TrueActive™ peak-

reading SWR / Wattmeter, antenna switch, built-in dummy load, 4:1 balun, lexan front panel. 3-1/2 H x 10-1/2 W x 9-1/2 D inches.

Ameritron HF Amplifiers

AMERITRON



AL-811H. 800 Watt PEP output. This low-cost desktop linear HF amplifier gives plenty of power to burst through QRM. This

will plug right into a 120 VAC outlet. Four tough 811A transmitting tubes, heavy-duty power supply, all HF band coverage, operate / stand-by switch, transmit LED, plus more! UPS shippable. AL-811. Similar but has three 811A tubes, 600 Watts PEP output.

AL-80B. 1 kW PEP output from a compact, desktop linear that plugs into 120 VAC outlet. Classic 3-500G tube, inrush current protection, two year limited warranty.



ALS-600. No tuning, no fuss, no worries – just turn on and operate. 600 Watts PEP / 500 W CW, 1.5-22 MHz, instant bandswitching,

SWR protected. 120 / 220 VAC. 9-1/2 W x 6 H x 12 D inches. Includes matching transformer power supply.

ALS-600S. ALS-600 with 10 lb. switching power supply.

HF Switched Inductor Tuners



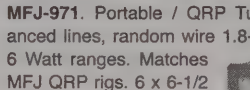
MFJ-949E. More hams use MFJ-949s than any other antenna tuner in

the world! 300 Watts, 1.8 to 30 MHz, custom inductor switch, 1000 volt tuning caps, full size peak / average lighted cross-needle SWR / Wattmeter, 8 position antenna switch, dummy load, scratch proof lexan front panel. Size 3-1/2 H x 10-5/8 W x 7 D inches.

MFJ-948. Economy version of MFJ-949E, less dummy load, lexan front.

MFJ-941E. Super value tuner handles 300 Watts PEP, covers 1.8-30 MHz, lighted cross-needle SWR / Wattmeter, 8 position antenna switch, 4:1 balun, 1000 volt capacitors. 10-1/2 W x 2-1/2 H x 7 D inches.

MFJ-945E. HF and 6 meter mobile tuner. Extends mobile antenna bandwidth. Tiny 8 x 2 x 6" fits easily in car.



MFJ-971. Portable / QRP Tuner tunes coax, balanced lines, random wire 1.8-30 MHz. 30 / 300 or 6 Watt ranges. Matches MFJ QRP rigs. 6 x 6-1/2 x 2-1/2 inches.



MFJ-901B. Wide range 200 Watt PEP versa tuner. Covers 1.8 to 30 MHz.



MFJ-902. Tiny Travel Tuner, 4-1/2 x 2-1/4 x 3", full 150 W, 80-10 M, tuner bypass switch.

MFJ-904H. Similar but adds SWR / Watt-meter, 4:1 balun. 7-1/4 x 2-1/4 x 2-3/4 inches.

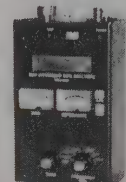
TUNERS / AMPS

MFJ SWR Analyzers

MFJ-259B. SWR Analyzer™ with impedance meter reads antenna SWR, complex RF impedance, resistance (R) and reactance (X) or magnitude (Z) and phase (degrees), coax cable loss in dB, coax cable length and distance to fault, return loss, reflection coefficient, inductance and capacitance. Tells battery voltage, has huge LCD digital readout with built-in frequency counter, side-by-side SWR and RF impedance meters, Ni-Cd / Ni-MH internal battery charger, battery saver feature, low battery warning, and easy-access batteries. Has smooth, reduction drive tuning. Truly portable. Uses 10 alkaline, Ni-Cd or Ni-MH batteries (not included) or 110 VAC with optional MFJ-1312D.



MFJ-269. Covers 1.8 to 170 MHz and 415 to 470 MHz. Has all of the features of the MFJ-259B plus a 12-bit A/D converter (gives much better accuracy and resolution), CoaxCalculator™ (calculates coax line length in feet given coax length in electrical degrees and vice versa) and coaxial characteristic impedance input (zero to six hundred Ohms).

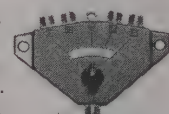


HF Antenna Switches

MFJ-1702C. 2 position antenna coax switch. New center ground, lightning arrester. 2.5 kW PEP, 1 kW CW. Loss below .2 dB. 50 dB isolation @ 450 MHz. 50 ohms. 3 x 2 x 3 inches.



MFJ-1704. Like MFJ-1702C. 4 positions. 6.25 x 4.25 x 1.25 inches. 50 ohm load. SWR 1.1:1 to 30 MHz; 1.5:1, 30-650 MHz. SO-239. 2.25 x 2.25 x 7 inches.



MFJ-1701. 6 position antenna switch, 50-75 ohms. Handles 2 kW PEP or 1 kW CW. 1.8-30 MHz. SO-239 connectors. Unused positions automatically grounded.

MFJ-1700C. 6 position antenna and transceiver switch switches between 1-6 antennas and 1-6 rigs. Handles 2 kW PEP or 1 kW CW, 1.8 to 30 MHz.

Dummy Loads

MFJ-250. 1 kW Dummy Load, 50-Ohm. Oil filled, low SWR to 400 MHz. Rated 1 kW CW or 2 kW PEP for 10 minutes. One half rating for 20 minutes. 200 Watts CW or 400 Watts PEP continuous. Includes industrial transformer grade oil (no PCB).



MFJ-264. HF/VHF Dry Dummy Load covers up to 650 MHz, usable to 750 MHz. Rated 1.5 kW for ten seconds, 100 Watts continuous. Perforated metal cabinet. SO-239.



MFJ-260C. HF/VHF Dry Load is similar to MFJ-264, but handles 300 Watts for 30 seconds. Has derating curve. SO-239.

ANTENNAS

Mobile Antennas

MFJ-1724B. Mobile magnetic mount dual band antenna gives you a quarter wave stainless steel whip for 2 meters and 440 MHz, coax and connector. Low SWR, 200 Watts.

MFJ-1728B. Mobile magnetic mount 5/8 wave 2 / 6 meter antenna. Low SWR, 300 Watts.

MFJ-1729. Mobile Magnetic Mount super gain dual band antenna. Get a whopping 2.6 dB gain on 2 meters and 6.3 dB gain on 440 MHz.

MFJ-1734. Dual band glass mount 144 / 440 MHz antenna gives 2.6 dB gain on 2 meters and 6.3 dB gain on 440 MHz. Low SWR on both bands.

MFJ-1738. 2 meter glass-mount antenna handles 50 Watts with 2.6 dB gain, low SWR over entire 2 meter band.

MFJ-1432. Dual band, 62.5" RuffRider™ hyper gain mobile antenna. 7.6 dB gain on 440 MHz, 5 dB gain on 2 m. Requires tri-magnet mount, not included.

HF Antennas

MFJ-1798. Ten band half-wave vertical antenna. Covers 10 bands: 75 / 80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 meters. No ground radials or ground needed because of the effective counterpoise that is 12 feet across. Mount from ground level to roof top. The feedline is isolated from the antenna using MFJ's AirCore™ balun. Achieves full-sized performance with full-size radials for 2-20 meters and high efficiency end-loading for 30, 40 and 75 / 80 meters. UPS Shippable.

MFJ-1796. 6 Band Vertical. Covers 40 through 6 meters. 12 feet tall with tiny 24-inch footprint. Mounts anywhere, handles 1500 Watts PEP.

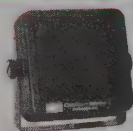
MFJ-1775. 1/2 Wave, 6-band rotatable mini-dipole. Just 14 feet wide, can be turned by a small TV-type rotator. Covers 40 through 2 meters, handles 1500 Watts.

MFJ-1778. All-band G5RV antenna. 102 feet long, 32.5 foot ladder line ending in SO-239 connector for your coax feedline. 1500 Watts. 80-10 m, 160 meters with tuner/ground.

MFJ-1778M. G5RV Junior. Half-size, 52 feet. Covers 40-10 meters.

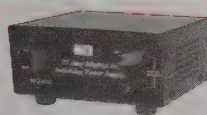
Speaker

MFJ-281. MFJ ClearTone™ restores the broadcast quality sound of shortwave listening. Makes copying easier, enhances speech, improves intelligibility, reduces noise, static, hum. 3-inch speaker handles 8 Watts. 8 ohm impedance. 6 foot cord.



Power Supplies

MFJ-4125. MightyLite™ Switching Power Supply. 25 amps surge, 22 amps continuous. No RF hash! Low ripple, highly regulated. Great review by QST magazine. Over-voltage and over-current protection circuits. Switchable AC input voltage, works from 85 to 135 VAC or 170 to 260 VAC. Replaceable fuse. Tiny 5.5 W x 2.5 H x 5.75 D inches. Weighs just 3.5 lbs.



MFJ-4225MV. Similar to MFJ-4125, but adds large 3-inch amp, volt meters and cigarette lighter plug. 5.25 W x 4.5 H x 6 D inches. Weighs 3.7 pounds.



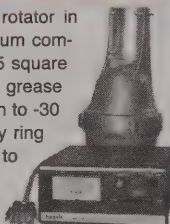
MFJ-4245MV. Similar to MFJ-4225MV but handles 45 amps surge and 40 amps continuous. 7.5 W x 4.75 H x 9 D inches. Weighs just 5.5 pounds.



hy-gain

Hy-Gain® Rotators

Ham IV is the most popular rotator in the world. Designed for medium communications arrays of up to 15 square feet. New low temperature grease permits normal operation down to -30 degrees Fahrenheit. New alloy ring gear gives extra strength up to 100,000 PSI. New indicator potentiometer, new ferrite beads to reduce RF susceptibility, new cinch plug connector plus 8-pin plug at the control box. Dual 98 ball bearing race for load and bearing strength and electric locking steel wedge brake prevents wind introduced antenna movement. North or south center of rotation scale on meter. Low voltage control. Order HAM-IVX for 220 volts.



T2X. For large and medium antenna arrays up to 20 sq. ft. wind load. Available with DCU-1 Pathfinder digital control or standard analog control box.



Hy-Gain® Antennas

AV-640. Uses quarter wave stubs on 6, 10, 12, and 17 Meters and efficient end loading coil and capacity hats on 15, 20, 30, and 40 Meters. No radials. No traps. No ground. No tuning. Handles 1500 Watts. Sleek and low profile, small area required for mounting. Automatic bandswitching, single coax cable feed, each band is individually tunable, wide VSWR bandwidth.

AV-620. Covers all bands 6 through 20 Meters.

Hygain also sells a large assortment of multi-band beams, yagis, wire antennas and other verticals. Ask about baluns, aluminum tubing and parts.



DC Power Strips

MFJ-1118. High current multiple DC outlet. Use for two HF and / or VHF transceivers and six or more accessories from your transceiver's main 12 VDC power supply.

MFJ-1116. Deluxe multiple DC power outlet. 8 outlets for powering accessories.



MFJ-1112, like the MFJ-1116 without on / off switch, voltmeter and fuse. 6 pair outlets.



MFJ-1117. For powering four HF / VHF radios (two at 35 amps each and two at 35 amps combined) simultaneously.



MFJ-1129. Get the best of both connectors. Has Anderson® powerpoles and high-current binding posts. Outlets 1, 2, 4-8 are Powerpoles®, outlet 3 is a 35A high current binding post. Includes 7 pairs of Power-Pole® 35A contacts, ten fuses.

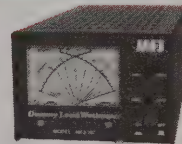
MFJ-1128. 12 outlets, factory installed fuses, handles 20 amps total.

MFJ-1126. 8 outlets. (12) 35A contacts.

MFJ-1124. 6 outlets. (8) 35A contacts.

SWR / Wattmeters

MFJ-267. Dry Dummy Load / SWR / Wattmeter combination. Large 3" cross-needle SWR meter, 1500 Watt dry load. 1.8 to 30 MHz. Perforated metal.



MFJ-868. Giant SWR / Wattmeter measures 6.5 inches diagonally across face. Covers 1.8 to 30 MHz.

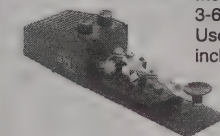
MFJ-867. Giant VHF/UHF SWR / Wattmeter. Same size as MFJ-868.

MFJ-862. Covers 144 / 220 / 440 MHz. 30 / 300 Watts forward, 6 / 60 Watts reflected ranges. 5.64 W x 2.5 H x 2.25 D inches. Has one sensor for all three bands.

Morse Reader / Tutor



MFJ-461. Morse Reader, 3-60 WPM. Use 9V, not included.



MFJ-418. Morse Tutor 3-60 WPM. Use 9V, not included.

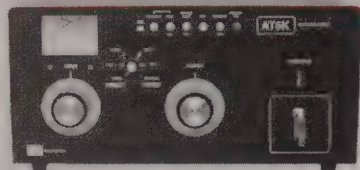


MFJ-557. Practice code oscillator, telegraph key.

MFJ-464. Keyer / Reader. They won't even know you never passed the code test! Sends / reads 5-99 WPM. Auto speed tracking. 2-line LCD. Use paddle or keyboard. Easy menu operation. Front panel speed, volume controls.



Designed by Hams for Hams. Made in the USA.



AT-5K Antenna Tuner

The AT5K takes power handling to the next level over the AT4K, coming in with a rating of 3500 watts single tone continuous performance with low losses and wide Z range. Palstar's AT5K, like its AT4K little brother, has a T-matching network utilizing a 1:1 unbalanced-to-balanced transformer at the INPUT of the network.

- 3500 Watts single tone, high efficiency, low tuner losses and wide Z range.
- 160m to 15m with limited Z range on 10m.
- Balanced output with high power 5 kW Teflon wire balun at the input of tuner circuit.
- Custom, large plate variable capacitors (600pF @ 6 kV).
- Ferrite 1:1 input balun.

- 10 Amp 7 kV CERAMIC 3.25" body roller inductor (35 μ H) wound with 10 Ga. plated solid copper wire.
- Six-position switchable antenna input switch with 7 kV, 10 Amp contacts.
- Peak and peak hold dual cross-needle metering (1-2 sec hold) with backlighting.
- Fan cooling for extended 100% duty cycle operation.



AT4K Antenna Tuner

The AT4K has a power rating of 2500 watts single tone continuous.

- Unbalanced/balanced output (switch activated on front panel) with high power balun at the input of tuner circuit.
- T match circuit: impedance matching range 8 ohms to 2000 ohms.
- Custom large value (460pf) variable capacitors at 6 kV.

- 10 amp edge-wound silver plated ceramic body roller inductors crank handle driven.
- Switchable antenna inputs.
- Ferrite 1:1 input balun.
- Peak / peak hold dual cross-needle metering (1-2 sec hold) with backlight.
- Size: 15" x 7" x 16" deep.
- Weight: 20 lbs.

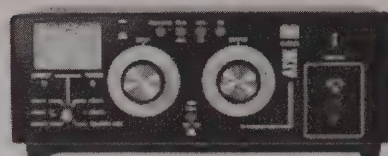


AT2KD Antenna Tuner

The AT1500DT and the AT1KP have been combined into a new 2kW tuner. The AT2K has all our features such as: peak and peak-hold; a resonant free roller system to operate from 6m to 160m continuously; new LED lit meter system; and a new compact size.

- Power rating 2000 watts pep.
- Frequency tuning range 160m to 6m.
- Impedance matching range 20 ohms to 1200 ohms.
- Easy and quick tuning with only two controls.
- 6 position mode switch for multiple antennas.
- Active peak and peak hold dual cross-needle metering (1-2 sec hold) with LED backlighting.
- Meter power range 0-300 watts / 0-3000 watts.

- Differential capacitor tuning with 2 stators and 1 rotor (420 pF - 13pF - 420pF @ 5kV).
 - Palstar designed ceramic body roller inductor.
 - High power ferrite 1:1 or 4:1 current balun (optional) externally installed.
 - 12 VDC wall transformer supplied (U.S. & Canada only).
 - Size: 12 1/2" x 5 1/2" x 16".
 - Weight: 12 lbs.
- Optional 1:1 or 4:1 Current Balun available.**



AT-2K Antenna Tuner

The smaller roller inductor allows the AT2K to tune 6 Meters, while a relay-

switched toroid adds the extra inductance needed for 160 Meter coverage. Newly designed capacitors feature lower minimum capacitance for improved high band performance, while maximum capacitance has been increased to 400 pF for better low band performance.

- Power rating 2000 watts PEP.
- Impedance range 20 to 1500 Ohm 160m to 10m (assuming resistive load).
- Ferrite 4:1 current balun.
- Low minimum custom variable capacitors (15pF to 400pF at 4.5 kV).
- 18 uH 5 kV ceramic body roller inductor with turns counter.

- Silver plated inductor wheel shaft and contact wheel.
- 10 μ H relay-switched add-on inductor for 160 Meters roller inductor with turns counter.
- Active peak / peak hold cross-needle metering with backlighting.
- 6 position ceramic wafer antenna selector switch.

Palstar Antenna Products

Model	Description	Price
Antenna Tuners		
HF-AUTOTUNE	1500 W Antenna Tuner	\$CALL
AT5K	3500 W Antenna Tuner	\$1,195.95
AT4K	2500 W Antenna Tuner	\$895.95
BT1500A	1500 W Balanced Antenna Tuner	\$695.95
AT2K	2000 W Antenna Tuner	\$498.95
AT2KD	1999 W Differential Antenna Tuner	\$499.95
AT500	600 W Antenna Tuner	\$459.95
Wattmeters		
PM2000A	2000 W Wattmeter 1.8Mhz to 60Mhz	\$159.95
WM150	1500 W Wattmeter 1.8Mhz to 60Mhz	\$119.95
WM150M	1500 W Wattmeter 1.8Mhz to 60Mhz	\$119.95
Antenna Analyzer		
ZM30	Antenna Analyzer SWR 1Mhz - 30 Mhz	\$379.95
ZM60	Antenna Analyzer SWR 1Mhz - 60 Mhz	\$389.95
Shortwave Accessories		
R30CC	Shortwave Receiver AM/SSB Collins Filters	\$749.95
SP30	Speaker 12 Watts (for R30C/CC)	\$89.95
MW550P	Medium Wave Active Preselector / Tuner	\$329.95
AA30	Shortwave Active Antenna Matcher .3 - 30Mhz	\$99.95
Dummy Loads		
DL1500	Dummy Load 1500 W - 450 Mhz	\$129.95
DL2K	Dummy Load 2000 W - 30 Mhz meter/fan	\$289.95
DL5K	Dummy Load 5000 W - 30 Mhz meter/dual fan	\$399.95
Baluns		
B4000	Balun 4/1 4000W-Voltage-Hi-Z	\$89.95
B4000C	Balun 1/1 4000W-Current-Low-Z	\$89.95
	Balun 1/1 for AT2KD	CALL
	Balun 4/1 for AT2KD	CALL

ACCESSORIES

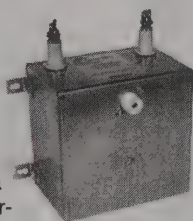


AT-500
Antenna Tuner

Covering 160 to 6 meters, the AT-500 features a differential tuning capacitor with 2 stators and 1 rotor, a precision ceramic body roller inductor, and a 4:1 ferrite current balun for balanced line feeds.

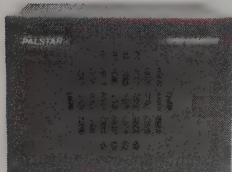
- Power rating: 600 Watts PEP SSB; 500 Watts CW.
- Output to both balanced and unbalanced lines.
- Impedance matching range 20 Ohms to 1500 Ohms.
- 6 position mode switch for multiple antennas.
- Active crossneedle peak / peak hold metering with backlighting.
- Meter power range 0-300 Watts / 0-1000 Watts.
- Differential capacitor tuning with 2 stators and 1 rotor (360pF - 14pF - 360pF @ 2.5kV).

B4000
Balun



Palstar's B4000 is a 1:4 voltage balun for use with Hi-Z antenna applications and center-fed wire antennas with open wire and twin lead transmission lines. It features a die-cast aluminum case for all weather indoor/outdoor usage. Inside the aluminum case are steatite insulators with a large 3.25" Ferrite core with Teflon sleeved 12 ga. wire and rated up to 4kW plus.

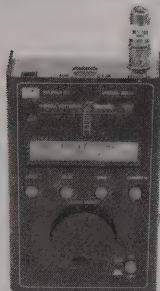
Shortwave Speaker
SP30



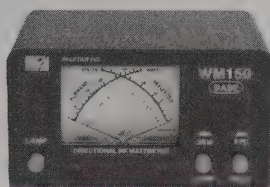
The compact SP30 shortwave speaker is tonally matched to the R30 and designed to put out

- clear, low-distortion reproduction of the frequency range of broadcast human speech.
- 20 W peak power.
 - 70 Hz to 15 kHz.
 - 1/4" mono plug included.
 - Size: 6" x 6" x 6" deep.
 - Weight: 4 lbs.

Antenna
Analyzer
ZM30



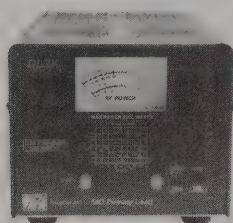
The ZM30 is an automated micro-controlled SWR antenna analyzer with an 8 bit micro-controller with a precision low power DDS signal generator. It includes a self-calibrating reflectometer. The digital display shows SWR at selectable frequencies from 1 to 30 Mhz. It measures: SWR, impedance, reactance, inductors and capacitors, transmission lines, stubs, Q, and resonant frequency. There is a serial port for field upgradable software. Battery operated.



WM150 Watt Meter

The WM150 measures and displays forward power, reflected power, and SWR simultaneously on its dual meter. The backlit meter can display either peak or average power readings, and has 300 and 3000 watt range settings. Accuracy of the readings is assured because the WM150 features a true shielded directional coupler.

- Range: 1.8 MHz to 60 MHz.
- PL259 coax connector.
- 115 VAC to 12 VDC adapter included.
- Size: 4.5" x 3.25" x 3.25" deep.
- Weight 1.2 lbs. / 0.55 Kg.



DL2K
Dummy Load

The fan-cooled DL2K is capable of handling 2000 watts for 1.5 minutes—long enough to tune your amp.

- Frequency range DC to 30 Mhz.
- Internal watt meter and analog metering.
- PL259 coax connector.
- Size: 6" x 5" x 12.5" deep.
- Weight 5 lbs.

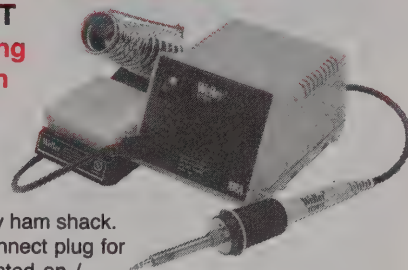
SOLDERING

Soldering Equipment

Weller®

WTCPT
Soldering
Station

HRO Price
\$169.95



A soldering station is a must for every ham shack.

- Quick disconnect plug for iron and lighted on / off switch.
- Special "closed loop" method of controlling maximum tip temperature.
- Transformer powered with macro style, low voltage, temperature controlled soldering iron.
- Power unit housing features impact resistant plastic.
- Separate conductor grounds iron tip and terminates at third pin of power cord.
- Uses PT series tips and operates at 600°F, 700°F and 800°F.

WLC-100 Solder Station

HRO Price \$79.95



- 40 watt solder station, 110 volts.
- Adjustable 5-40 watts with safety guard solder iron.
- Includes holders, sponge and tip.

8200

Solder Gun

HRO Price \$49.95



100/140W, 110 V. Ready to solder in 6 seconds. Finger tip selection of high / low power. Great for soldering coax connectors.

D650

Solder Gun

HRO Price \$79.95



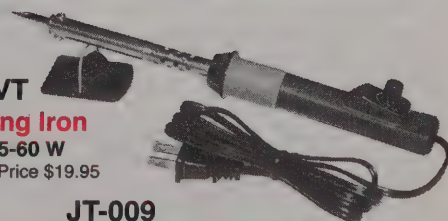
Solder gun, 200 / 300 watts. Great for soldering coax connectors outside.

ECG®

SOLDERING PRODUCTS

J-060VT
Soldering Iron

25-60 W
HRO Price \$19.95



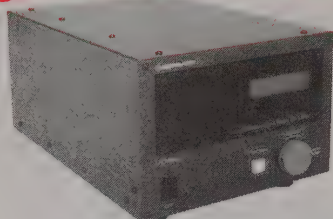
JT-009

Three Replacement Tips for the J-060VT
HRO Price \$7.95

HF AUTO TUNERS

RIG MATCHING

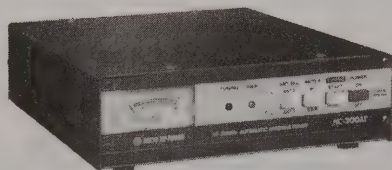
TOKYO HY-POWER



HC-1.5KAT

This high-power tuner is designed to work with Tokyo Hy-Power HL-1.5KFX and HL-2.5KFX linear amplifiers. When used with these amps, the band change is made automatically through the band data signal from the radio and the amplifier. (Version 1.2 firmware or higher required on HL-1.5KFX.) It handles maximum power of 1.5 kW pep / cw when the intrinsic antenna SWR is no more than 2 to 1. Maximum impedance matching range is SWR 4 to 1 on HF and 3 to 1 on 6 m. Input impedance is 50 Ω .

Two high grade 3.5 kV rating 200 pF air variable capacitors form a "T" match circuit driven by high speed stepping motors. Our tuning algorithm plus an advanced 16 bit microprocessor enables an extremely fast tuning speed of one second typical and four seconds maximum. The tuner has three SO-239 output connectors and an LCD display with 16 characters in 2 rows. The unit is 8 x 5.6 x 12 inches (WxHxD) and weighs 11 pounds. **HRO Price \$CALL**



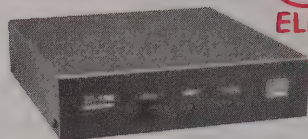
HC-200AT

The HC-200AT works with a variety of antennas, tuning with lightning speed. The large analog meter automatically displays SWR status and forward power.

- Frequency Range: 1.8 – 54 MHz.
- Impedance Range: 5 – 500 Ω (3.5-54 MHz) / 15 – 500 Ω (1.8 MHz).
- Handling Power: 200 W max. PEP/CW.
- Input Impedance: 50 Ω (SO-239).
- Output Connectors: Two SO-239's and one wire antenna terminal.
- Tuning Time: 1.5 sec (typ), 4 sec max, 0.2 sec for memory tuning mode.
- DC Power: 12–14 VDC, 0.8A max, 0.1A after tuning is finished.
- Dimensions: 7.7 x 2.4 x 9.5 inches (WxHxD).
- Weight: approx. 2.3 pounds.
- Optional Parts: Radio Interface Cable (Icom) HTC-100AT / Icom5 (17ft).

HRO Price \$CALL

LDG
ELECTRONICS



IT-100

Especially for Icom Radios

The ideal tuner for IC-7000 and other Icom radios covers all frequencies from 1.8 – 54 MHz and will automatically match your antenna in a flash. Tunes 1 to 125 watts SSB, CW and digital modes. Has a front panel push button for manual or automatic tune plus a status LED. Tune with the IT-100 or use your radio. Includes more than 2,000 memories. Uses latching relays. Tuning range is 4–800 ohms, powered by your radio. Includes Icom interface cable.



KT-100

For Kenwood AT-300 Compatible Transceivers

The KT-100 allows you to use the TUNE button on any AT-300 compatible Kenwood transceiver. Front panel LEDs indicate tuning status and will show a match in seconds. The KT-100 has 2000 memories for band and frequencies. Using the supplied cable, just plug the unit into your AT-300 compatible transceiver. **HRO Price \$199.99**



YT-100

Auto Tuner for Yaesu Transceivers

The YT-100 includes a cable that connects with your FT-857, FT-897 or FT-100 (including all D models) making it an integrated tuner powered by the interface. Press the tune button on the tuner, and everything else happens automatically: mode and power are set, a tune cycle runs, and the radio is returned to its original settings. Handles RF power from 1 to 100 watts. CAT thru port for radio computer control. 2000 memories. 1.8 – 54 MHz coverage. **HRO Price \$199.95**

YT-450

Desktop Tuner

for the Yaesu FT-450 and FT-950

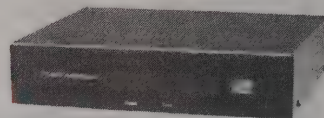
The YT-450 includes a CAT/Power cable interfaces with your FT-450 and FT950. Just press the tune button on the tuner and everything else happens automatically! The mode is set to carrier and the RF power is reduced, a tune cycle runs and the radio is returned to the original settings. **HRO Price \$249.95**



YT-847

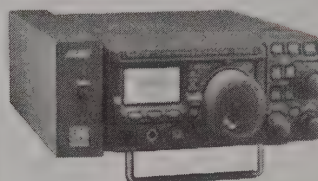
Desktop Tuner for the Yaesu FT-847

HRO Price \$249.95



AT-897 Plus

Auto Tuner for the Yaesu FT-897 (radio not included)

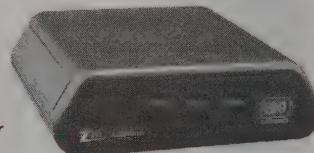


If you own a Yaesu FT-897 and want a broad range automatic antenna tuner, look no further! The microprocessor controlled AT-897 Plus mounts on the side of your FT-897 just like the original equipment. A front panel button initiates the tuning sequence while lowering the RF power to 25 watts and will bypass the tuner if pressed momentarily. The AT-897 takes power directly from the CAT port of the FT-897 and provides a second CAT port on the back of the tuner so, if you are using another CAT device, hooking it up couldn't be easier. Tunes any coax fed antenna. Use a balun for long wires. **HRO Price \$199.95**

Z-817

Automatic Tuner for the Yaesu FT-817

The Z-817 automatic tuner operates on 160 – 6 meters. Smaller than the radio (4.5 x 4.5 x 1.5"), it attaches to the CAT port with the provided cable. Press the Tune button on the tuner and the Z-817 with built-in One-Touch-Tune interface does the rest: sets mode and power on the radio, tunes, then restores mode and power. Tuning time is 0.2 seconds for recalling one of its 2000 memories and a full tune average time is 2.5 seconds. The Z-817 also works with any QRP radio with output of up to 20 watts. Just press the tune button on the tuner while transmitting a carrier and it finds a match. Includes one foot CAT interface cable and coax jumper. Has CAT-thru port to allow computer control of radio. Tuning range of SWR loads from 6 to 450 ohms. It is powered by four AA batteries (not included). **HRO Price \$129.99**



Z-817H

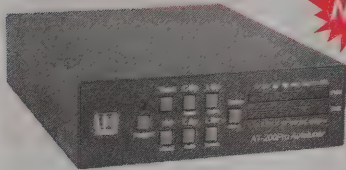
Automatic Tuner for the Yaesu FT-817

The Z-817H is the ultimate autotuner for QRP radios including the Yaesu FT-817(D) with addition of the Tokyo High Power HL-45B. The Z-817H interfaces to the CAT port (ACC) on the back of the FT-817 radio with the provided cable. One button push on the tuner is all that is needed to tune. It will switch to PKT mode, transmit a carrier, tune the tuner, then restore the radio to the previous mode! The CAT thru port on the back allows connection to the THP HL-45B for automatic band selection on the amp. **HRO Price \$159.99**



ANTENNA TUNERS

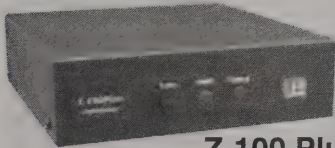
LDG
ELECTRONICS



AT-200 PROII

The first auto tuner designed for today's high-powered transceivers

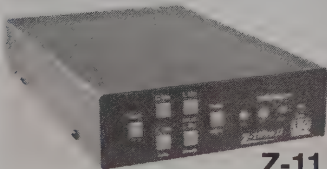
The AT-200 features LDG's "3-D Memory Array" allowing up to eight antenna settings to be stored for each frequency. Handles up to 250 watts SSB or CW on 1.8 – 30 MHz, and 100 watts on 54 MHz (including 6 Meters). Rugged and easy-to-read LED bar graphs show power and SWR. A function key on the front panel allows you to access data such as mode and status. An LED indicates bypass mode and another shows which antenna is selected. **HRO Price \$259.95**



Z-100 Plus

Definitive low cost automatic tuner!

Designed from the ground up to provide 125 watt power handling in SSB, CW and digital modes, the Z100 Plus features 2000 memories that store both frequency and tuning parameters. Operating frequencies are stored with tuning parameters to make memory tunes in a fast 0.1 seconds. Full tunes take an average of only 6 seconds. The tuner will run on any voltage source from 7 – 18 volts. Six AA batteries will run it for a year of normal use. **HRO Price \$159.95**

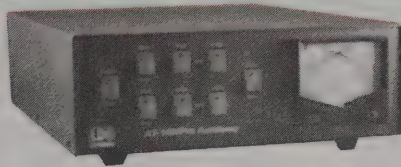


Z-11 Proll

The Return of a Legend

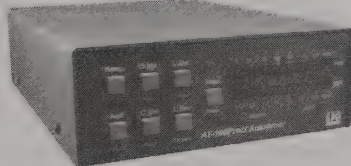
Here is everything you always wanted in a small, portable tuner designed from the ground up for battery operation. **Only 5" x 7.7" x 1.5" and weighing 1.5 pounds**, it handles 0.1 to 125 watts, making it ideal for both QRP and standard 100-watt transceivers from 160 – 6 meters. **With 8,000 memories in LDG's exclusive "3-D Memory" array**, the Z-11 Pro uses a state-of-the-art processor-controlled switched-L tuning network. It matches dipoles, verticals, inverted-Vs or virtually any coax-fed antenna. With an optional LDG balun, it will also match longwires or antennas fed with ladder-line. **HRO Price \$179.95**

Tune Two Antennas



AT-1000 Pro

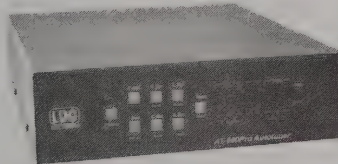
The LDG AT-1000 Pro features an auto mode that automatically starts a tuning cycle any time the SWR exceeds a limit you set. There are provisions for two antennas and you can switch between them. 2000 memories store tuning parameters for each antenna. The unit will operate at any power level between 5 and 1000 watts peak RF input. A large, easy to read cross needle meter has two selectable ranges. It will tune from 1.8 to 54 MHz matching a wide range of antennas. **HRO Price \$599.95**



AT-100 PROII

This automatic desktop tuner covers 1.8 – 54 MHz. A two-position antenna switch allows you to switch instantly between two antennas. The AT-100 Pro requires just 1 watt for operation, but will handle up to 125 watts, making it suitable for everything from QRP to a typical 100 watt transceiver. It includes more than 2,000 memories for each antenna, automatically storing tuning configurations for each frequency and band as you use them. Includes antenna and bypass indicators on front panel. **HRO Price \$229.95**

AT-600 PRO



The AT-600 Pro will handle up to 600 watts SSB and CW, 300 on RTTY (1.8 – 30 MHz), and 250 watts on 54 MHz. This tuner features LDG's state-of-the-art, processor-controlled switched-L tuning network. It will match virtually any kind of coax-fed antenna, including Yagis, dipoles, inverted Vs, slopers, loops. It typically matches a 10:1 SWR down to 1.5:1 in just a few seconds. You can also use the AT-600 Pro with longwires, random wires, and antennas fed with ladder line just by adding a balun.

The AT-600 Pro has more than 4,000 memories, automatically storing tuning data for frequencies and bands as you use them. The tuner has 2 antenna ports, a front panel indicator showing which is in use, and separate memory banks for each antenna. Easy-to-read LED bargraph meters showing RF power, SWR and tuner status, tactile feedback control buttons and an LED bypass indicator. Any power source from 11-16 VDC can be used. The tuner draws only 750 mA during a tune cycle. **HRO Price \$349.95**

Turbo-Tuner



Plug and play with your Kenwood, Icom, or Yaesu radio. The controller will find the lowest SWR for a given frequency. No calibration required. Tuning is initiated with the tune control located on the radio. All tuning is performed with 10 watts or less. The controller is RFI filtered and is RF bullet proof to full legal limit. Current rating up to 2 amps for driving large screwdriver antennas. Firmware is upgradeable via a PC (no chip swapping).

- Works with most Icom HF radios 706, 7000, 756 Pro, 746 Pro, 718 with a CI-V Port and a Tune button.
- Works with Kenwood TS-480, TS-2000, TS-570.
- Works with Yaesu FT-897, 857. Works on 160 & 75 Meters does not use ATAS circuitry. (Does not work with FT-100 or FT100D).

For Yaesu

TT-FT-450-950	\$269.95
TT-FT-857-897	\$269.95

For Icom IC-7000

TT-IC7000	\$199.95
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For Icom 706, 718, 7000, 7200, 746, 756, 7600

TT-ICOM	\$269.95
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For Kenwood TS-480, TS-2000, TS 570

TT-KENWOOD	\$269.95
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For Other Radios such as TS-50, FT-100, Alinco, and vintage radios

TT-UNIVERSAL	\$269.95
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**Free UPS
Ground Shipping
on Most Orders
Over \$100**



ANTENNA TUNERS PLUS

Smartuners™ are the most versatile and reliable antenna couplers available. Available for power levels from 1.5 to 500 Watts and with frequency ranges spanning the HF bands from a single antenna, they provide all-purpose tuning ideal for base, mobile, or portable operation. Just provide 12V, connect to transceiver, antenna and ground, and get on the air with minimum SWR. Visit sgcworld.com for a detailed review of the Smartuner family, and find the right one for your needs. Stop tuning, start talking.

The Original Smartuner™

SG-230

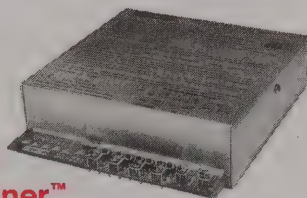


\$499.95
HRO Price

The SG-230 Smartuner was the first product in the HF market to offer fast, flexible tuning without any user interface. It is built in a rugged, factory sealed ABS enclosure. With this tuner and any single antenna, you will have continuous coverage from 1.8 to 30 MHz and it can be used with any transceiver you'll ever own. The SG-230 can be used in base station, mobile, marine and aviation applications, and has been the "Gold Standard" of automatic antenna tuning for more than a decade.

The Budget Smartuner™

SG-239 – \$199.95



Get quality performance from a low cost package. The SG-239 will operate from 1.8 to 30 MHz with 1.5 to 200 W. Like all Smartuners, it gives you the most flexibility because it will work with any antenna and any transceiver. It also has push buttons for a manual tune option. It weighs only 2 pounds, so you can use it for base or portable.



**HF
Antenna
Coupler**
SG-235

\$1295.95 – HRO Discount Price

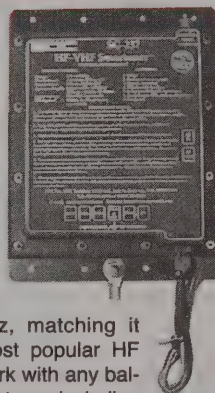
This fully automatic coupler for 500 watts will tune an antenna at least 23 feet long for the HF bands. The SG-235 automatically evaluates and switches 64 input and 32 output capacitor combinations plus 256 inductance combinations in a pi network design. The tuner remembers the chosen frequency and tuning values and automatically reselects those values when transmitting on that frequency.

The General Purpose Smartuner™

SG-237

\$359.95

The SG-237 is the most popular Smartuner. Its rugged construction and small size allow for maximum flexibility. It has a 100 W power rating and expanded coverage to 60 MHz, matching it perfectly with the most popular HF transceivers. It will work with any balanced or unbalanced antenna including whips, backstays, dipoles, loops and long wires.



Antenna Switch



**Master
Antenna Controller**
MAC-200

\$249.95 – HRO Discount Price

Select the right antenna, for the right band, at the right time with the MAC-200. You can select among up to five antennas and tune automatically to minimum SWR. Monitor your power and SWR with meters on the front panel. The MAC-200 automatically selects the correct antenna for your operating frequency, quickly and accurately. It stores the correct settings in memory and will recall them in less than ten milliseconds.

HF Whip Antenna

SG-303

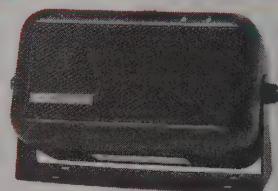
Up to 500 Watts
HRO Price \$CALL

SGC's 9-foot helically wound whip antenna comes in two sections and provides full HF coverage when used with a Smartuner or other antenna coupler. Covers 1.8-30 MHz, up to 500 W. Available with SGC's mobile swivel ratchet mount, Cat. # 55-75.

Noise Reduction Speaker

**SG-7014
Speaker**

**HRO Price
\$159.95**



The affordable ADSP2 speaker delivers top of the line noise reduction for any receiving device. Two levels of noise reduction (13 dB, 26 dB) and 3 band pass filters (100 Hz, 500 Hz, 1800 Hz) with simple push-button operation. Includes an external headphone jack. 110 – 500 mA consumption.

SGC Smartuners

Specifications	SG-230	SG-235	SG237	SG-239	MAC-200*
PEP Input (W)	3-200	3-500	3-100	1.5-200	1.5-200
CW Max Input (W)	80	200	40	80	80
Frequency (MHz)	1.8-30	1.8-30	1.8-60	1.8-30	1.8-60
Input Current (A)	0.9	1.4	0.3	0.23	0.23
Antenna Length (<3.3MHz)	8 ft	50 ft	8 ft	40 ft	40 ft
Antenna Length (>3.3MHz)	23 ft	300 ft	28 ft	100 ft	100 ft
Dimensions (in)	16x12x3	16x12x3	7x6x1.5	7.5x6x2	8.5x6.5x3
Weight (lbs)	8	8	2	2	5
Waterproof	yes	yes	yes	no	no
HRO Price	\$499.95	\$1,295.95	\$359.95	\$199.95	\$265.95

* Desktop Unit controls and switches up to 5 units.

POWER CABLE ACCESSORIES



Adapter Cables



C2P-5

Cigarette Lighter Plug Fused (AGC) to Powerpole (Length: 5 ft., Amps: 15 amps). **HRO Price \$14.95**



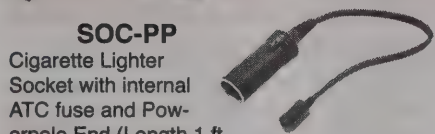
C2O-5

Cigarette Lighter Plug Fused (AGC) to OEM-T Male Connector (Length: 5 ft., Amps: 15 amps). **HRO Price \$14.95**



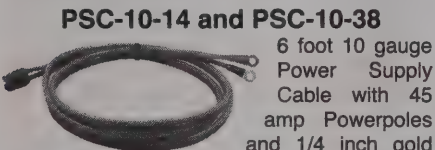
PP2O-5

Powerpole to OEM "T" Male Connector (Length: 5 ft.) **HRO Price \$14.95**



SOC-PP

Cigarette Lighter Socket with internal ATC fuse and Powerpole End (Length 1 ft., Amps: 15 amps). **HRO Price \$14.95**



PSC-10-14 and PSC-10-38

6 foot 10 gauge Power Supply Cable with 45 amp Powerpoles and 1/4 inch gold plated ring terminals on the other. **HRO Price \$13.95**



PSC-08

10 foot of 8 gauge Power Supply Cable with 75 amp Powerpole connectors on one end and 1/4 inch gold plated ring terminals on the other. **HRO Price \$18.95**

Red / Black Wire

Model	Description	HRO Price per Foot
RB-08	Red/Black 8 gauge wire	\$1.56
RB-10	Red/Black 10 gauge wire	\$1.25
RB-12	Red/Black 12 gauge wire	\$0.99
Model	Description	HRO Price per Roll
RB-14-25	25 ft Roll 14 Gauge	\$14.95
RB-18-25	25 ft Roll 18 Gauge	\$6.95
RB-22-25	25 ft Roll 22 Gauge	\$6.95

Meter



Watt-BLK-PP

Watt's Up meter with Powerpole ends by RC Electronics. **HRO Price \$58.95**

Fused Adapter Cables

PPH-12

ATC Style 12 gauge fuse holders with 30 amp Powerpoles mounted on each end. Includes (2) 15 amp ATC fuses. **HRO Price \$12.95**

PPH-10

ATC Style 10 gauge fuses holders with 45 amp Powerpoles mounted on each end. Includes (2) 40 amp ATC fuses. **HRO Price \$14.95**



PPH-08

ATC Style 8 gauge MAXI fuse holder with 75 amp Powerpoles mounted on each end. Includes (2) 80 amp MAXI fuses. **HRO Price \$24.95**

RGH-12

ATC Style 12 gauge fuses holders with 30 amp Powerpoles mounted on one end and gold plated 1/4" or 3/8" ring terminals on the other. Includes (2) 15 amp ATC fuses. **HRO Price \$12.95**

RGH-10

ATC Style 10 gauge fuses holder with 45 amp Powerpoles mounted on one end and gold plated 1/4" ring terminals on the other. Includes (2) 40 amp ATC fuses. **HRO Price \$14.95**

RGH-08

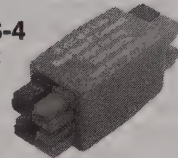
ATC Style 8 gauge MAXI fuses holder with 75 amp Powerpoles mounted on one end and gold plated 1/4" ring terminals on the other. Includes (2) 80 amp ATC fuses. **HRO Price \$24.95**

Powerpole Splitters

Red-Dee-2 Connect

PS-4

Red-Dee-2™ Connect Powerpole splitter. **HRO Price \$17.95**



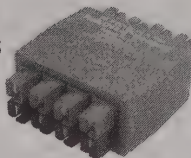
PS-4 Plus

Red-Dee-2™ Connect Powerpole splitter. **HRO Price \$17.95**



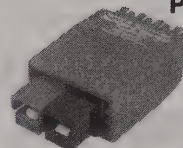
PS-8

Red-Dee-2™ Connect Powerpole splitter. **HRO Price \$27.95**



PS-75 / 45-4

Red-Dee-2™ Connect Powerpole splitter. **HRO Price \$38.95**



PS-6AA

Red-Dee-2™ Powerpole splitter with Powerpole connectors on both ends. **HRO Price \$34.95**



TRlcrimp Tool

Exclusively designed to provide a positive crimp on the Anderson Power 15, 30 & 45 amp contacts in one tool. Crimper for Anderson Power Products. **HRO Price \$39.99**



Expand the functionality of your TRlcrimp tool with these **additional die sets**. Easily crimp OEM T, HF / VHF connectors, SB50 / PP75 contacts, hex crimp for various coaxial cable connectors, non-insulated terminals, insulated terminals, end sleeves. **HRO Price \$54.99**

Powerpole Bags

Model	Description	HRO Price Per Bag
PP- 15-10	Powerpole 15A 10 pack	\$9.95
PP- 15-25	Powerpole 15A 25 pack	\$19.95
PP- 30-10	Powerpole 30A 10 pack	\$9.95
PP- 30-25	Powerpole 30A 25 pack	\$19.95
PP- 45-10	Powerpole 45A 10 pack	\$14.95
PP- 45-25	Powerpole 45A 25 pack	\$29.95

CABLE ASSEMBLIES / COAX

Cable Assemblies

CABLE X-PERTS Ready-Made Coax Cable Assemblies

Model	Connector Both Ends	Burial	UV Resistant	Shields	Attenuation @ 100 Feet	Best Frequencies
CXP1318FC	PL259	Yes	Yes	2 (100% bonded foil + 95% TC Braid V/F 84%)	50 MHz 1.1 150MHz 1.9 450MHz 3.3	50-450 MHz
CXP008C	PL259	No	Yes	1 (95% BC Braid) V/F 78%	10 MHz 0.51 30MHz 0.9 50MHz 1.2	1-50 MHz
CX1318FN	"N"	Yes	Yes	2 (100% bonded foil + 95% TC Braid V/F 84%)	150MHz 1.9 450MHz 3.3	150 MHz and Higher
CXP08XC	PL259	No	Yes	1 (95% BC Braid) V/F 78%	10 MHz 0.98 30MHz 2.0	1 - 30 MHz
CPX213C	PL259	Yes	Yes	1 (97% BC Braid) V/F 66%	10 MHz 0.62 30MHz 1.2	1 - 30 MHz (High Power)

RG213/U w/PL259

Part Number	Length (feet)	HRO Price
CXP213C100	100	\$112.95
CXP213C50	50	\$69.95
CXP213C6	6	\$24.95
CXP213C3	3	\$22.95

RG8/U Foam w/PL259

CXP008C100	100	\$99.95
CXP008C50	50	\$55.95
CXP008C25	25	\$39.95
CXP008C12	12	\$32.95
CXP008C6	6	\$29.95
CXP008C3	3	\$26.95

RG8X-Mini w/PL259

CXP08XC100	100	\$54.95
CXP08XC75	75	\$44.95
CXP08XC50	50	\$38.95
CXP08XC25	25	\$28.95
CXP08XC18	18	\$25.95
CXP08XC6	6	\$19.95
CXP08XC3	3	\$19.95

9913-type Flexible w/N-Connector

CXP1318FN150	150	\$190.95
CXP1318FN100	100	\$132.95
CXP1318FN50	50	\$78.95
CXP1318FN25	25	\$51.95
CXP1318FN6	6	\$39.95
CXP1318FN3	3	\$27.95

9913-type Flexible w/UHF Connectors

CXP1318FC100	100	\$126.95
CXP1318FC50	50	\$63.95
CXP1318FC6	6	\$22.95
CXP1318FC3	3	\$20.95

Tinned Copper Ground Braid

235	1" wide	\$1.99/ft
2332	1/2" wide	\$0.69/ft
235RT-5	1" 5 ft long*	\$13.95
235RT-10	1" 10ft long*	\$17.95
2332RT-5	1/2" 5ft long	\$7.95
2332RT-10	1/2" 10ft long*	\$9.95

* w/Ring Terminals

Coax-Seal



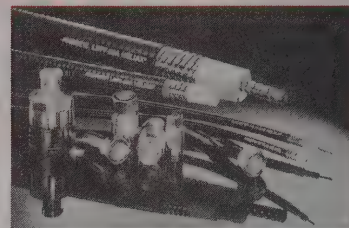
Coax-Seal will seal all types of coax fittings, baluns, antenna parts and connectors of any shape. Adheres to most surfaces. Wrap Coax-Seal around the object you want to protect and then mold it into shape. Keeps moisture out of the coax fitting on antenna feed lines. Need to make a change? Just remove it and start over. HRO Price: \$2.99 / roll

CoaxWrap



CoaxWrap will provide your coax connections with outstanding protection from the weather. Just wrap the connection with the convenient roll. When you need access to the connection, the wrap removes easily. Price per roll \$5.99.

Coax & Connectors



Andrew coax and all the matching connectors you will need are available as a special order drop shipment. Contact your nearest HRO store for complete details.

Model #	Cable Type	Diameter Inches	\$/100 feet*
LDF2-50	Foam Dielectric	3/8 inch	CALL
LDF4-50A	Foam Dielectric	1/2 inch	CALL
LDF5-50A	Foam Dielectric	7/8 inch	CALL
FSJ4-50B	Superflex	1/2 inch	CALL

*Plus Shipping

Patch Cables

Soldered with teflon PL-259 silver connectors.

Item	Description	HRO Price
HRO213/100U	100' 213 coax with PL259	\$109.95
HRO213/125U	125' 213 coax with PL259	\$139.95
HRO213/3U	3' 213 coax with PL259	\$16.95
HRO213/50U	50' 213 coax with PL259	\$65.95
HRO213/6U	6' 213 coax with PL259	\$22.95
HRO8X/100U	100' 8X coax with PL259	\$69.95
HRO8X/18U	18' 8X coax with PL259	\$22.95
HRO8X/25U	25' 8X coax with PL259	\$32.95
HRO8X/3U	3' 8X coax with PL259	\$11.95
HRO8X/50U	50' 8X coax with PL259	\$45.95
HRO8X/6U	6' 8X coax with PL259	\$16.95
HRO8X/75U	75' 8X coax with PL259	\$59.95
HRO8X/1.5U	18" 8X coax with PL259	\$11.49

Cable Ties

BongoTies™

NEW!

Get It Together!



BongoTies are handy elastic ties for cables and other unruly items. Perfect for audio, music, computer, office and home, sports, workshop and your Ham Shack. They are reusable, easy to apply and remove. The ties are made of high quality natural rubber and wood. (Not for outdoor use.) HRO Price \$4.99 for a bag of 10

CONNECTORS / CABLE / ROPE

We have RF cable available from



CABLE X-PERTS

Coax

Purchase coax in any length up to 500 feet.

RG8 / U

The cable is a standard RG8 /U, #13 stranded copper center conductor, cellular polyethylene insulation, 97% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 1.8 dB loss per 100' at 100 MHz. The most popular cable for HF/VHF/UHF. Use when long cable runs are not required.

RG213 / U

RG-213 / U coax, #13 stranded copper center conductor, solid polyethylene insulation, 97% bare copper shield, non-contaminating PVC jacket, 50 ohm impedance, 66% velocity factor and 2.2 dB loss per 100' at 100 MHz. This RG-8 type cable is best for HF. It may be buried.

9913F-7

9913F-7 is RG8-type coax, #9.5 stranded copper conductor, foam polyethylene insulation, 100% foil plus 88% braid shield, PVC jacket, 50 ohm impedance, 84% velocity factor and 1.4 dB loss per 100' at 100 MHz. The best cable for VHF and UHF applications.

RG8X

RG8X is small diameter coax, #16 stranded copper center conductor, cellular polyethylene insulation, 95% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 3.7 dB loss per 100' at 100 MHz. Good for short VHF runs and most HF uses.

Rotator Cable

8 wire, standard duty - Model 5971 - 8 wire cable using six #22 and two #18 tinned copper conductors. PVC insulation.

8 wire, heavy duty - Model 5972 - 8 wire cable using 6 - #18 m and 2 - #16 tinned copper conductors. PVC insulation; chrome PVC jacket.

When Ordering Cable

Please order in multiples of 50 feet. Continuous length spools up to 500 feet are available. Call for quotes.

**Call for Quotes on
your Cable Needs**

Cable

TIMES

Call for Low Discount Prices on Times Cable

LMR-200 - RG58 type

This is a standard RG58 'type' outdoor cable that is ideal for jumper assemblies, short antenna feeder runs, or any application requiring an easily routed, low loss RF cable. It has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 83%. It will withstand 1000VDC, a peak power of 2.5 kW, and shielding effectiveness is >90 dB.

LMR-240 - RG8X type

This RG8X 'type' outdoor cable has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 84%. It will withstand 1500 VDC, a peak power of 5.6 kW, and shielding effectiveness is >90 dB.

LMR-400 - RG8 / RG213 type

This is a standard RG8 / RG213 'type' outdoor cable that has a solid BCCA inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 85%. It will withstand 2500 VDC, a peak power of 16 kW, and shielding effectiveness is >90 dB.

LMR-400-UltraFlex

Similar specs as LMR-400 with TPE jacket.

Connectors

Model	Description	HRO Price
BNC-44	BNC to UHF Adapter (BNC-255)	\$5.99
N-31	N to UHF Adapter (4400)	\$9.99
PL-259ST	PL-259	\$2.49
N-TGS	Type N Male	\$6.99
UHF-08	4 hole SO-239 Chassis Connector	\$4.99
UHF-10	Double Male UHF (83-877)	\$5.99
UHF-11	UHF Barrel (83-1J)	\$4.99
UG-363-4	Long UHF-UHF Barrel (83-1F)	\$9.99
UHF-15	RT. Angle Teflon, Gold Pin (83-1AP)	\$8.99
UHF-13	UHF "T" (83-1T)	\$5.99
UHF-19	BNC to UHF Adapter (31-28)	\$6.99
UHF-18	UHF to N Adpter (14000)	\$8.99

Antenna Rope

Synthetic Textiles

Black Dacron® Polyester

This antenna rope is constructed of strong, double braid Dacron® polyester. It is black for UV protection and has excellent resistance to mildew and abrasion. The rope ties and cuts easily, sealing effectively with a hot knife. No expensive hardware is required. Sizes and prices shown in the chart.

Size	Model	Strength	HRO Price*
3/32"	ST-3/32-100	260+ lbs	\$9.95
3/16"	ST-3/16-100	770+ lbs	\$18.95
5/16"	ST-5/16-100	1790+ lbs	\$24.95

** Price per 100 feet

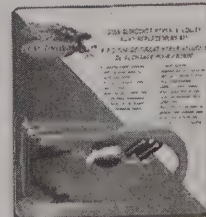
Line Thrower



E Z HANG

EZ HANG 2 can be used to "throw" a line up to 100 feet over a tree or other object. Cable pullers can use EZ HANG to "throw" a line through a dropped-ceiling/plenum and avoid using long pull-rods. It cuts installation time and your cost dramatically.

EZ HANG's basic construction is steel attached to a reel that is corrosive resistant plastic and stainless steel. The reel comes with 300 feet of 10-pound-test monofilament line installed, a quick-disconnect clip to release the weight and an easy-to-see "bright yellow" one-ounce lead weight.



EZ HANG 2 Package

includes spare bands, 2 weights and clips and the EZ HANG
HRO Price \$89.95

Note: This is a "slingshot" device. Before ordering, please check local laws regarding possession and / or use of a slingshot.

LIGHTNING PROTECTION

Lightning Protection

PolyPhaser[®] CORPORATION

Coaxial Impulse Suppressors

Hermetically-sealed voltage sensitive gas tubes and other components assure that surge voltages and currents will not reach your equipment.

Flange Mounts

HRO Price \$61.95

Model	Frequency Range MHz	Maximum Power Watts
IS-50 UX-CO	1.5-400	HF - 2 kW
		VHF - 35 W
		UHF - 125 W
IS-50 UX-C1	50-700	VHF - 375 W
		UHF - 125 W
IS-50 NX-C2 w/ N connect	125-1000	VHF - 375 W
		UHF low - 125 W
		800 MHz-1 GHz - 50 W

Bulkhead Mounts

HRO Price \$64.95

Model	Frequency Range MHz	Maximum Power Watts
IS-B50 LU-CO	1.5-400	HF - 2 kW
		VHF - 375 W
		UHF - 125 W
IS-B50 LU-C1	50-700	VHF - 375 W
		UHF - 125 W
IS-B50 LN-C2 w/ N connect	125-1000	VHF - 375 W
		UHF low - 125 W
		800 MHz-1 GHz - 50 W

Grounding Panel

Model CU-SPGP

A .062" thick copper plate mounted on a painted 1/2" plywood backing. Mounting protectors and a single ground point established for station equipment. Comes with concrete anchors, all mounting screws, 10' of 1.5" copper grounding strap, 2 brass sandwich plates, and joint compound. 18" x 12". HRO Price \$CALL

Rotator Control Protector

Model IS-RCT

Provides protection for rotator controllers, motors, control box and other nearby equipment. HRO Price Call

Power Line Extension Protector

Two-outlet extension cords with master on/off switch and circuit breaker.

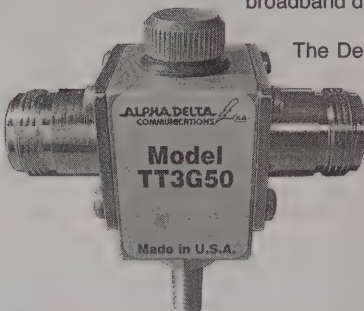
Model	Length	HRO Price
IS-PLDO-120-15A	15'	120V@15A Call
IS-PLDO-120-20A	6'	120V@20A Call

ALPHA DELTA

Surge Protectors

Transi-Traps

The **ATT3G50** coaxial surge protector was designed for the cellular, microwave point-to-point, and the broadband wireless industry. These products feature very low loss performance through 3 GHz. Typical loss is 0.1 dB at 1 GHz through 0.5 dB at 3 GHz. This series represents the lowest loss broadband design in the industry. Choose type "N" or "UHF" connector.



The Defense Logistic Agency (DLA) has assigned National Stock Number (NSN)5920 01 5470278 to the Model TT3G50 Coax Surge Protector and NSN 5325 01 5466841 to the 3G50 ARC-PLUG (tm) Cartridge for use in all US Military and NATO applications, worldwide.

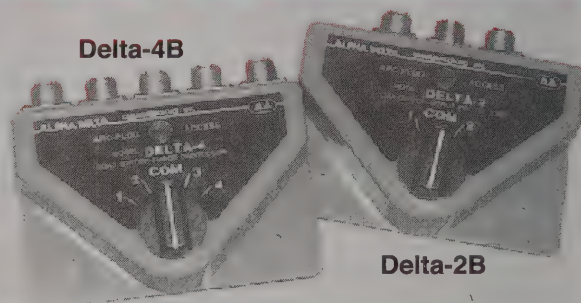
Model	Description	HRO Price
ATT3G 50	200 W - 3.0 GHz, Type N	\$59.95
ATT3G 50HP	2 kW - 3.0 GHz, Type N	\$59.95
ATT3G 50U	200 W - 500 MHz, UHF	\$49.95
ATT3G 50UHP	2 kW - 500 MHz, UHF	\$49.95

Coax Switches

Lightning Protected Coax Switches

4 Position Switch

This lightning protected 4 position RF coax switch uses the Alpha Delta Arc-Plug cartridge to protect your equipment from electrical surges. The exclusive center "off" (ground) position internally disconnects and grounds all antenna circuits. It has cast housing with constant impedance micro-strip cavity construction. Features a positive detent roller bearing switch drive. Handles full legal power. Delta-4/N for type "N" connectors. The Delta-4 handles frequencies through 500 MHz and the Delta-4/N through 1.3 GHz. HRO Price \$89.95; Type N \$99.95.

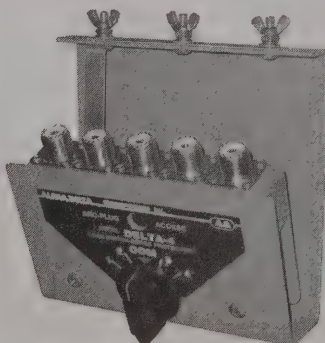


2 Position Switch

This 2 position coax switch is precision lightning surge protected. Has the same constant impedance cavity construction with "center-off" ground as the Delta-4 and a built-in replaceable Arc-plug cartridge. Order UHF or type "N" connectors for low-loss performance through 1.3 GHz. HRO Price \$59.95; Type N \$75.95.

Antenna Selector Console Desktop Coax Switch

This series retains all the features and specifications of the precision DELTA-4B series, including ARC-PLUG™ module surge protection, in a desk top console that will sit right next to the equipment on your desk without having to be secured or bolted down. The console features a powder-coated steel housing and a solid brass ground buss, with #10 wire attachment hardware across the rear of the housing providing a common ground point for all station equipment and accessories.



Model ASC-4B Antenna Selector Console Switch (4 position, UHF Connectors thru 500 MHz. HRO Price \$149.95

Model ASC-4B/N Antenna Selector Console Switch (4 position, N Connectors thru 1.3 GHz. HRO Price \$159.95



COAX SWITCHES

BALUNS & ROTATORS

Switches



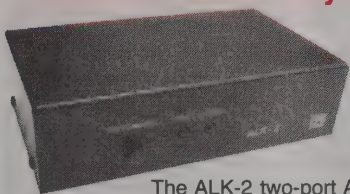
**2 Position
Coax Switch**

CS-201

Daiba has two heavy-duty coaxial switches. Both are usable to 500 MHz and the unused positions are grounded. Switches are available at slightly higher prices with type "N" connectors. **HRO Price \$32.95**

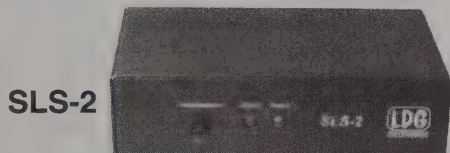


Audio / Linear / Key Switch



ALK-2

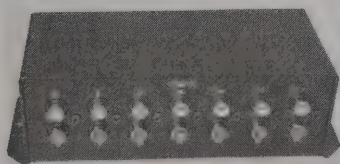
The ALK-2 two-port Audio / Linear / Key Switch electronically switches a common 1/8" stereo jack and stereo RCA jacks between two other sets of 1/8" stereo / RCA jacks. Used to switch stereo audio, code keys or linear amp but will switch any pair of low voltage signals. **HRO Price \$49.99**



SLS-2

Microphone Switch

The SLS-2 microphone switch with RJ-45 connectors if for use with modern transceivers. It has two switched and one common jack. You can switch one microphone between two radios or one radio between microphones. A push-in/push-out button on the front selects the port and an LED lights to indicate the selection. **HRO Price \$59.99**

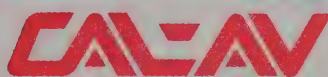


RCA-14

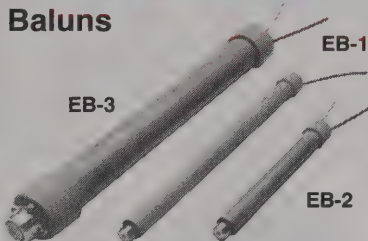
Breakout Box

A breakout box for the accessory jacks on most popular transceivers. It comes with cables with the right DIN plugs, and all the outputs are simple RCA jacks. The RCA-14 comes with a DIN 13 cable, a mini DIN 6 and a mini DIN 8. **HRO Price \$59.95**

Baluns



Baluns



EB-3

EB-1

EB-2

Low-profile baluns mount directly to your yagi boom for easy installation. All are 50 ohms and broad band. **From left to right**—EB-3: 7-30 MHz, 10 kW CCS, AWG 10 wire, DIN-7-16 connector; EB-1: 1.8-30 MHz; EB-2: "shorty" for tri-banders and LP's, 10-60 MHz. EB-1 and EB-2 are 3 kW, AWG 14 wires, connector mates with PL-259. Wire leads are easy to connect and are color coded for antenna phasing. CAL-AV baluns are vacuum impregnated and sealed for durability and protection from the weather.

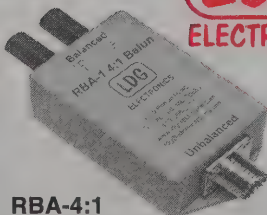
**HRO Prices: EB-1 \$49.95;
EB-2 \$49.95; EB-3 \$259.95**

Mark-V Antenna Spring



SS-1-MKV

At last — a commercial grade antenna spring of polished, all-stainless construction. The MARK-V provides improved immunity to side winds, gusts, bumps, etc. over smaller, wimpy springs. It reduces fading due to match/resonance changes while in motion. The MARK-V is 2" in diameter by just under 5" long, with ham-standard 3/8-24 threaded hole in each end. **HRO Price \$89.99**



RBA-4

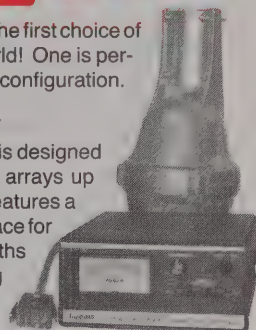
RBA-4:1
Remote 4:1 Balun \$30
RBA-1:1
Remote 1:1 Balun \$30

hy-gain

Hy-gain rotators are the first choice of hams around the world! One is perfect for your antenna configuration.

Ham - IV

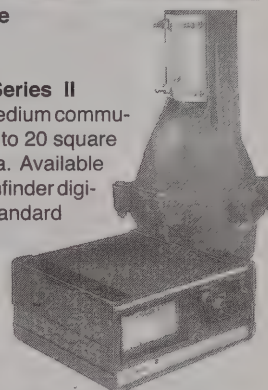
The popular Ham-IV is designed for medium antenna arrays up to 15 square feet. It features a dual 98 ball bearing race for load bearing strengths and an electric locking steel wedge brake. Maximum mast size 2 1/16". **HRO Price \$599.95**



Tailtwister Series II

This unit handles medium communications arrays up to 20 square feet wind load area. Available with the DCU-1 Pathfinder digital control box or standard analog control box. Has 138 ball bearings for large load bearing strength. Maximum mast size 2 1/16".

**HRO Prices:
T2X \$699.95, T2XD \$1229.95**



Ham - V

For medium antenna arrays up to 15 square feet wind load. Includes the DCU-1 Pathfinder digital control unit. No more terminal strips. Features cinch connector plus 8-pin plug at the control box. Maximum mast size 2 1/16". **HRO Price \$949.95**

HDR-300A

Choose this rotator for king-sized antenna arrays up to 25 square feet of wind load. Heavy-duty self-centering steel mast clamp and hardware. Digital display accurate to 1 degree. **HRO Price \$1379.95**

AR-40

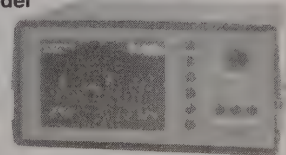
Especially for large FM-TV and compact communication antenna arrays up to 3.0 square feet wind load area. Dual 12 ball bearing race. Automatic position sensor never needs resetting. Maximum mast size 2 1/16". Includes MS�D light duty lower mast support. **HRO Price \$319.95**

CD-45II

The CD-45II handles up to 8.5 square feet of antenna wind load when mounted inside the tower or 5 square feet with the included MS�D light duty lower mast adapter. Has 58 ball bearing race. Maximum mast size 2 1/16". **HRO Price \$429.95**

DCU-1 Pathfinder

A digital control unit for the T2S, Ham-IV and Ham -V rotators. **HRO Price \$749.95**



Yaesu's high quality rotators for amateurs include models for medium to large arrays and for satellite work. There are also provisions for computer control. Contact your nearest HRO for more specifications and discount prices on Yaesu products.



G2800DXA

The G-2800DXA is a high-technology rotator designed to turn the largest tower-mounted antenna arrays.

G-800SA / G-800DXA

The G-800 rotator series is designed for medium to heavy loads and antennas up to 20 square feet. The G-800DXA is the same as the G-800SA with the addition of presets.

Rotator Computer Controllers

Rotator	GS-23	GS-232	GS-232B
G-800S/SDX	✓	1	1
G-1000S/SDX	✓	1	1
G-2000S/SDX	✓	1	1
G-2300S/SDX	✓	1	1
G-2700S/SDX	✓	1	1
G-2800S/SDX	✓	1	1
G-800DXA			✓
G-1000DXA			✓
G-2800DXA			✓
G-5400B		✓	✓
G-5600B		✓	✓
G-5500		✓	✓
G-400		2	3
G-500	2	2	3
G-500A	2	2	3
G-500B	2	2	3
G-5500	2	2	3

✓ Fully Compatible

1. Requires C-1000 Interface Cable
2. Requires GX-500 Interface for GS232
3. Requires GX-500 Interface for GS-232B

Rotator Specifications

	Model	Input Voltage	Motor Voltage	Rotation Time	Stationary Torque	Rotation Torque	Maximum Windload	Max. Vert Load	Max. Mast Size	Cable Type	Weight lbs (kg)	HRO Price
M2	OR-2800DC	110/220 VAC	28 VDC	55 sec	17,000 in lbs	3200 in lbs	35 sq ft	1800 lbs	3-1/8 in	8-wire	42 (19)	CALL
Yaesu	G-450A	110 V	24 VDC	51 sec	217 ft lbs	39.8 ft lbs	10 sq ft	242 lbs	2 in	5-wire	7 (3.2)	CALL
	G-800SA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	CALL
	G-800DXA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	CALL
	G-1000DXA	110 VAC	24 VDC	55 sec	5200 in lbs	79 ft lbs	22 sq ft	440 lbs	2.5 in	6-wire	15 (6.8)	CALL
	G-2800DXA	110 VAC	24 VDC	55 sec	20,832 in lbs	219 ft lbs	34 sq ft	880 lbs	2.5 in	6-wire	26 (11.8)	CALL
	G-5500	110 VAC	24 VDC	58 sec	289 ft-lbs	*	10.7 sq ft	440 lbs	2.5 in	6-wire	20(9)	CALL
	G-550	110 VAC	24 VDC	67 sec	289 ft-lbs	101 ft-lbs	10.7 sz ft	440 lbs	1-5/8 in	6-wire	7.9 (3.6)	CALL

* Elevation 101 ft-lbs, Azimuth 44 ft-lbs

ROTATORS



Orion OR-2800DC Rotator



The Orion OR-2800DC is engineered for long life, reliability and performance while turning large antennas or systems. It has a strong ductile iron mast clamp to support up to 3-1/8" masts (optional long bolts required), extended and hardened drive shaft, and prop-pitch style torque plate. The rotator housing fits inside most popular towers and mates to standard tower / rotator plates.

The RC2800P Control Box has digital readout, variable speed control, slow start, and reverse delay, programmability, preset, 2 rotator capacity, coast-down, true AZ readout-continuous and infinite limit position control. The USA-made OR-2800DC has a one year warranty. **HRO Price \$CALL**

Wind Area Capacity	35 sq. ft.
Starting Torque	4200 in. lbs.
Rotating Torque	3200 in. lbs.
Breaking Torque	17000 in. lbs
Vert. Load Capacity	1800 lbs.
Mast Size (O.D.)	1.75-3-1/8"
Rotation Speed (360)	55-270 sec.
Readout Accuracy	1 degree
Input Voltage	110/220 AC 50/60 Hz
Motor Voltage	28-42 VDC
Cable Type	8 conductor
Weight (Rotator unit)	42 lbs.

G-1000DXA

The G-1000DXA is designed to handle bigger arrays up to 22 square feet. A great value.

G-450A

The G-450A is ideal for smaller HF and VHF/UHF antennas. Features 360 degree radial compass display with overlap.



HRO Price \$CALL

G-5500

This is the most popular azimuth and elevation rotator for satellite, moon-bounce or other space communications work. It provides horizontal and vertical antenna rotation in a single unit. The control box has two large meters, one showing elevation and the other azimuth. Meter aiming accuracy is within ±4%. The G-5500 provides 180° elevation rotation with a rotation time of 67 seconds. A 360° azimuth rotation takes just 50 seconds. This rotator accepts up to a 2.5" mast, a maximum 1-5/8" horizontal cross-boom and 440 pounds of vertical load. Computer controllable with optional GS-232 computer interface. **HRO Price \$CALL**

communications work. It provides horizontal and vertical antenna rotation in a single unit. The control box has two large meters, one showing elevation and the other azimuth. Meter aiming accuracy is within ±4%. The G-5500 provides 180° elevation rotation with a rotation time of 67 seconds. A 360° azimuth rotation takes just 50 seconds. This rotator accepts up to a 2.5" mast, a maximum 1-5/8" horizontal cross-boom and 440 pounds of vertical load. Computer controllable with optional GS-232 computer interface. **HRO Price \$CALL**

G-550

This is an elevation rotator for satellite work. The control box shows elevation in degrees. **HRO Price \$CALL**

Rotator Separation Kit

For some applications it is desirable to separate the azimuth from the elevation rotator on the tower. This separation kit provides all the hardware for the rotator to implement this separation. **HRO Price \$CALL**



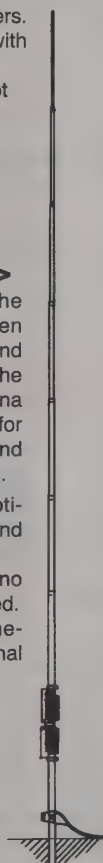
Multi-band HF Verticals

HF9V

More efficient than conventional trapped designs or "halfwave" verticals, the exclusive Butternut Differential Reactance Tuning system allows more of the antenna to be active on each band, for greater bandwidth, lower radiation angle, and superior performance!

- 9 bands, 80 thru 6 meters.
- No-radial operation with CPK counterpoise.
- Highly efficient 26 foot vertical radiator.

HRO Price \$469.95



HF2V →

Are you ready for the sunspot shortage when the action will be on 80 and 40? Be prepared with the HF2V. The entire antenna radiates on both bands for low radiation angle and maximum performance.

- Dual-band optimized for 80 and 40 meters.
- 32 feet tall; no guying required.
- 160 or 30 meters with optional adapters.

HRO Price \$299.95

← HF6V

Work the 6 most popular bands— 80, 40, 30, 20, 15 & 10 meters—with a single, highly efficient vertical radiator only 26 feet tall!

- No radial operation with CPK counterpoise.
- Add 160, 17 & 12, or 6 meters with optional adapters.

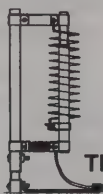
HRO Price \$399.95



HF5B

Five popular bands in a single light-weight 2 element beam antenna. Ideal where space is limited, the HF5B provides up to 3 dBd on 20, up to 5 dBd on 15, 12, and 10. Light enough to turn with a TV rotator, the HF5B has a 6 foot boom and a wingspan of only 12.5 feet. Weighs only 20 pounds; surface area is 3 square feet.

HRO Price \$469.95



Vertical Antenna Accessories

TBR-160S

TBR-160S 160 Meter kit for HF9V-X, HF2V or HF6V-X. Not recommended for CPK.

HRO Price \$169.95

CPK Counterpoise kit for HF9V-X, HF6V-X. Allows operation with no radial system.

HRO Price \$199.95

STR-II Resonant radial kit for above ground mounting of Butternut verticals.

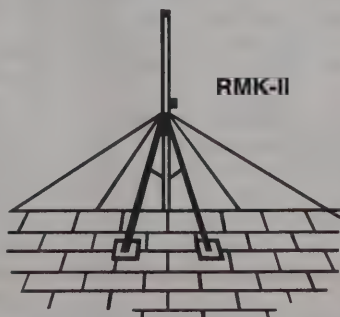
HRO Price \$159.95

A-17-12 Adapter for 17 and 12 meters for 6 band Butternut verticals.

HRO Price \$66.95

RMK-II-Roof mounting kit. Includes STR-II. **HRO Price \$199.95**

GRK Ground Radial Kit. **HRO Price \$99.95**



HF BASE ANTENNAS

Cobra Antenna

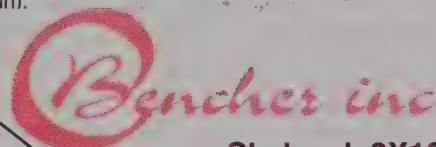
UltraLite Senior
160-10 Meters, 140 feet
HRO Price \$125.95

UltraLite Junior
80-10 Meters, 73 feet
HRO Price \$115.95

On its primary and harmonic operating frequencies, the Cobra antenna works identically to a ladder-line fed doublet, but its unique close-spaced multi-wire element also introduces two added resonant responses below the antenna's fundamental operating frequency. These responses extend frequency coverage far beyond that of a conventional doublet or G5RV. For example, the 140-foot (80-meter) Cobra also resonates near 2.8 MHz and on 160 meters. Similarly, the 73-foot (40-meter) Cobra also covers 60 and 75 Meters.

UltraLite Cobras are designed and engineered to survive harsh winter climates. Weighing only four pounds including the feedline, they install quickly and pull up higher with far less stress on tree branches and support lines. The black marine-grade ABS insulators won't deteriorate in sun or fracture in cold. All hardware is stainless. All wire is uV stable and pull-tested for strength. UltraLites come pre-assembled and ready to install with 100-feet of rugged copper-weld ladder line attached.

All Cobras require a tuner. In most installations, the auto-tuner built into your transceiver should provide sufficient tuning range. Because the Cobra presents a balanced load, we recommend installing a 4:1 current-style balun at the station end of the feedline (many external tuners provide a built-in balun).



Skyhawk 3X10

The Next Generation HF Yagi
HRO Price \$1199.95



The Bencher Skyhawk antenna is a major step forward for serious HF operators. It is not just another trapped tribander. The Skyhawk features

10 elements on a 23 foot boom, with three full-sized yagis sharing a common feedline and a common boom. There are three elements on 20 meters, three on 15 meters and four on 10 m. All elements are full-sized with no lossy traps and driven directly.



SKYHAWK

Special features of the Skyhawk include wide bandwidth, excellent F/B ratios, superb gain, and low weight. With boom and element wind compensators, there is zero rotational mast torque and 90 mph wind survival. All materials are corrosion and UV resistant. Stainless steel blind rivets are used for element assembly.

Custom aluminum extrusions make assembly a snap and assure longevity. A new design of boom to mast bracket makes installation the easiest ever. Heavy wall boom construction means that no boom truss cable is required, making it easier to stack antennas for other bands. A Bencher P5 balun is included.

Band Specifications

Band	Effective Boom Length	VSWR	F/B	Gain
20	23	<1.4:1	>20 dB	>7 dBi
15	15'6"	<1.3:1	>16 dB	>7 dBi
10	16'9"	<1.6:1	>14 dB	>7.7 dBi

The wind load is 8.5 sq. ft, turning radius 22 feet, wind survival is 90 mph with no ice, 2" boom, 50 ohm impedance and a maximum power rating of 5KW.



Challenger

The Challenger antenna is the first production multiband utilizing GAP technology. It is capable of operating on eight separate bands from 3.5 MHz to 144 MHz. Use it on 80, 40, 20, 15, 12, 10, 6 and 2 meter bands with over 130 kHz bandwidth on 80 m. The antenna is designed to be mounted directly in the ground or elevated. A ground mount is provided with each antenna. The Challenger may be roof mounted. The antenna requires a counter poise of three 25 foot insulated wires.



Eagle DX

Gap's smallest antenna, the Eagle DX, weighs just 11 pounds and can be installed almost anywhere. It is essentially a set of vertical dipoles. No traps, coils or transformers are used. It covers 40, 20, 17, 15 and 10 meters with the entire band at a VSWR of 2:1 or less. For 10 m this is 500 kHz. No antenna tuner is required.



Voyager DX

The Voyager DX is the first antenna manufactured specifically to provide efficient low band operation from the typical backyard without a huge investment in time, money, and space. It is not another "add a kit" antenna for 160m. GAP technology opens up the low bands. Emphasis was given to 160 m and 80 m when designing the Voyager. The antenna employs a capacity hat with circular ring to reduce the physical height to 45 feet while maintaining an electrical height of 66 feet. Parallel tuner rods are used in its design. No tuning or matching are required to put the Voyager on the air.



GAP Antennas

Model	Bands	Bandwidth (under 2:1)	Height (ft)	Weight (lbs)	Mount	Counter poise	Ground Area Required	HRO Price*
Challenger	80, 40, 20, 15, 12, 10, 6, 2m	Entire band except 130kHz 80m	31.5	18	Ground or elevated. Ground Mt supplied	3 at 25'	10' x 12'	CALL
Voyager DX	160, 80, 40 20m	Entire band except 900kHz 160m	45	30	Ground. Aluminum pivot and guy brackets supplied	3 at 57'	4 guy points 25 ft from base	CALL
Eagle DX	40, 20, 17, 15, 12, 10m	Entire band except 500 kHz 10m	21	11	Most anywhere. Pole mount supplied for 1.25 ant Mast	3 rigid at 80" long		CALL

* All GAP antennas shipped PLUS freight

HF BASE ANTENNAS

HF Dipole Antenna

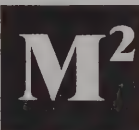


YA-30 - \$CALL - HRO Price

This 83-foot broadband dipole antenna provides optimum performance over 1.8-30 MHz. Usual requirements for an antenna tuner between the rig and antenna are eliminated by the unique broadband design. Handles 150 watts at an SWR of less than 1.9:1 on the amateur bands. Preassembled and pretuned. Can be installed as a horizontal flat-top, inverted-V, or sloper. 100 feet of RG-8X with PL-259 included.

6m / 2m / UHF Beams

New Ham Starter Antennas



6m, 2m, 220 MHz, or 440 MHz

These low cost antennas have a single heavy duty mounting cradle and stainless steel hardware - the quality construction you have come to expect from M².

Built with size and portability in mind, these antennas are great for field days, mountain topping, fox hunts, DXpeditions and ATV use. The antennas break down to no more than 40" long, making them a natural for travel.

Model	Elements	Description	HRO Price
6M3-SS	3	6m beam	\$149.95
2M3-SS	3	2m beam	\$79.95
222-5SS	5	220 MHz beam	\$92.95
440-6SS	6	440 MHz beam	\$78.95

HRO Ships from Your Nearest Store

RadioWavz

Product Model HRO Price

G5RV Line

G5RV Jr.	g5jr	\$34.99
G5RV Lite	g5lt	48.95
G5RV	g5rv	39.99
G5RV CL	g5rvcl	45.00
G5RV MAX	g5rvmax	75.99

Dipoles with 1:1 Balun

160 m	160dp11	79.95
80 m	80dp11	59.95
40 m	40dp11	47.95
20 m	20dp11	39.95
10 m	10dp11	37.95

Dipoles without Balun

160 m	160dp	70.99
80 m	80dp	50.99
40 m	40dp	40.99
20 m	20dp	32.99
10 m	10dp	32.99

Double Bazooka

160 m	160dbx	129.95
80m	80dbz	95.00
75 m	75dbz	79.95
60 m	60 dbz	70.00
40 m	40 dbz	59.95
30 m	30dbz	59.95
20 m	20 dbz	39.95
17 m	17 dbz	37.95
15 m	15 dbz	37.95
12 m	12dbz	37.95
11 m	11 dbz	37.95
10 m	10dbz	37.95
6 m	6 dbz	37.95
2 m	2dbz	37.95
220b	220dbz	37.95
440b	440dbz	37.95

DX Loop

160 m	160lp	250.95
80 m	80lp	139.95
40 m	40lp	79.95
20 m	20lp	59.95
11 m	11lp	49.95
6 m	6lp	49.95
2 m	2lp	45.00

DX (OCF) Windom

DX 40	dx40	55.00
DX 80	dx80	75.00
DX 169	dx16040m	125.00

Baluns

1:1 Air	b11a	23.95
1:1 Ferrite	b11f	29.95
1:1 Isolation	b11i	29.95
1:4 Voltage Air	b14va	27.95
1:4 Voltage Ferrite	b14vf	29.95
1:4 Current Air	b14ca	32.95
1:4 Current Ferrite	b14cf	39.95
1:6 Current Isolation	b16ci	39.95
1:9 Balun Isolation TX	b19tx	29.95
1:12 Balun ISO XMA2	b112tx	49.95

HF / VHF / UHF BASE ANTENNAS

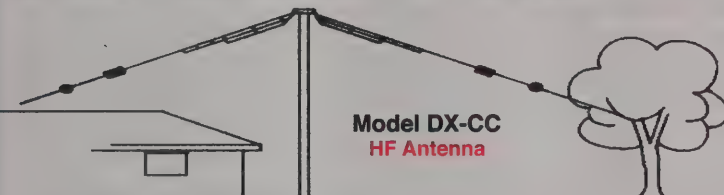
Limited Space Antennas

ALPHA DELTA

All of Alpha Delta's limited space antennas use stainless steel hardware where required, are fully assembled, and are manufactured to withstand severe weather. SO-239 connectors.

Model DX-B is a single wire, high performance quarter-wave sloper antenna for 160, 80, 40 & 30 meters. For limited space, the antenna requires only 60 feet for installation. Use with a wide range antenna tuner. Pre-assembled and pre-tuned. Has stainless steel hardware, 12 gauge insulated solid copper wire and the Alpha Delta "ISO-RES" RF choke coils, 50 ohm coax feed. Full legal power. **HRO Price \$110.95**

Model DX-A: A quarter wave twin sloper for 160-80-40 meters. One leg is 67' and the other 55'. Installs as an inverted-V. **HRO Price \$99.95**



Model DX-CC: A no trap 80-40-20-15-10 meter dipole. 82' long. **HRO Price \$159.95**

Model DX-DD: A no trap 80-40 meter dipole. 82' long. **HRO Price \$130.95**

Model DX-EE: A no trap 40-20-15-10 meter dipole. Only 40' long. **HRO Price \$140.95**

HF Tribands



Classic Tribanders C Series

Force 12 has a lineup of antennas covering the 20-15-10 bands with a single feedline. C-Series antennas are multiple monoband Yagi antennas stacked horizontally on a single boom using FORCE 12's patented open sleeve system. All are trapless and are acclaimed as outperforming trapped antennas.

- C-3 20-10 m, 18' boom.
- C-3S 20-10 m, 12' boom.
- C-3SL 20-15-10 m
(3-element 20, 3-element 15, 4-element 10, w/ separate feedlines for maximum versatility).
- C-4 40-10 m, 18' boom.
- C-4S 40-10 m, 12' boom.
- C-4XL 40-10 m, 30' boom
(w/ 2 elements on 40).
- C-4SXL 40-10 m, 23' boom
(w/ 2 elements on 40).

Call HRO for Quotes

HF / VHF / UHF

Maldol HVVU-8 Ultra-Compact Vertical Antenna

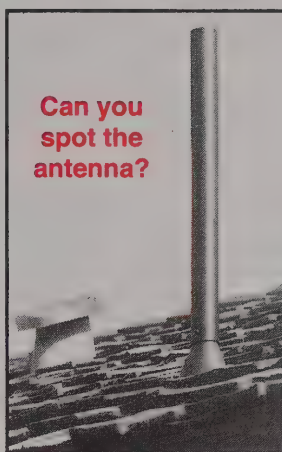
8 Bands Cover HF / 2m / 70 cm

At only half the height and weight of traditional HF vertical antennas, model HVVU-8 includes 2m and 70cm. It is easily configured and installed in confined or restricted spaces such as apartment balconies, or for temporary use. Each HF band and 6m has an independently tuned radiator and radial system while the main antenna mast is tuned for constant operation on 2m / 70 cm.

- HF and 6m: 1/4 wave.
- 2m: 1/2 wave 2.15dBi gain.
- 70cm: two 5/8 waves in phase, 5.5 dBi gain.
- Impedance: 50 Ohm.
- Max power HF: 200 W SSB; 6m-70 cm: 150 W FM.
- Height: 8 ft 6 inches; Weight: 5 lbs 7 ozs.

HRO Price \$319.95

Ventenna™ Company



Can you
spot the
antenna?

Neither can your
neighbors.

At last a solution to antenna restrictions! The Ventenna™ quickly slips over an existing vent pipe and your signal really gets out! This nearly invisible antenna is one of the most ruggedly made.

The VT-27 dual-band is for 2 m / 440 MHz. Single band models are for 2 m, 220 MHz and 440 MHz.

Model	Bands	HRO Price
VT-14	2 meters	\$79.95
VT-22	220 MHz	\$79.95
VT-44	440 MHz	\$79.95
VT-27	2 meter & 440 MHz	\$119.95

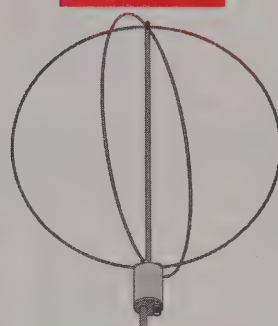
Portable HF Vertical Antenna

HFp — \$189.95
HRO Price

The HFp portable HF vertical antenna covers 6.5 MHz to 30 MHz. (An 80 m option is available.) It handles 200 watts and is 10.5 feet when fully assembled. The package weighs 2.2 pounds.

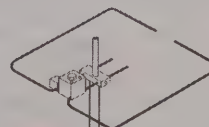
Typical band width without adjustment is 200 kHz on 40 m, 400 kHz on 20 m, greater than 1 MHz on 10 m, and the full band on 30m, 17m, 15m and 12 m.

The antenna includes elements for all bands, mounting base, ground radials on easy-to-use spools, and guy cable on an easy-to-use spool.

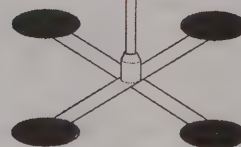


2m Eggbeater EB-144 / RK2M HRO Price \$CALL

Use the Egg-beater for fixed and mobile operations. It produces smooth omnidirectional horizontal polarity at the horizon. Above the horizon, the pattern transforms to right hand circular off the top making it a natural for OSCAR use. No rotation or steering is required.



2m HO Loop



Shown with optional
mag mount
HRO Price \$CALL
Colored versions higher

Nothing satisfies more than our 2m "HO" Loop for horizontal performance. This easily adjustable antenna has plenty of bandwidth. It will handle a KW plus. Stack antennas for more gain.

The Loop has durable construction for "tree bashers." Have no weather worries with the bright aluminum standard finish or an anodized finish in gold, black, turquoise or green.



Cushcraft HF Antennas

Model	Bands	Ele	Fwd Gain dBi	Max F/B dB	Min SWR	Boom Length		Boom Diameter		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight	
						FT	M	IN	CM	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg
MA-5B	10 12 15 17 20 meters	3	5.3 10m 1.0 12 m 4.8 15m 1.0 17m 3.6 20m	22	1.2:1	7.3	2.2	1.5	3.8	17.5	5.3	8.8	2.7	1 1/2	3.8	3.22	0.3	26.5	12
MA-5V	10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95
MA-6V	6, 10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95
R6000	20 - 10 + 6 meters	1	3		<1.2:1					19	8.7			1 3/4	4.4	1.5	0.14	12.5	5.6
R8	40 30 20 17 15 12 10 6m	1	3		<1.3:1					28	7.3							23	10.5
A3S	20 15 10 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	27.8	8.5	15.5	4.7	2	5.1	4.4	0.41	30	13.6
A743 Kit	40m for A3				<1.2:1					35	10.7	15.5	4.7	2	5.1	0.06	0.06	7	3.2
A3WS	17 12 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	25	7.6	14.4	4.4	2	5.1	4.1	0.38	26.5	12
A103 Kit	30m for A3WS				<1.2:1					32	9.8	14.4	4.4	2	5.1	0.04	0.04	6	2.7
A4S	20 15 10 meters	4	8.9	25	<1.2:1	18	5.5	2	5.1	32	9.8	18.4	5.6	2	5.1	5.5	0.51	38	17.2
A744 Kit	40m for A4S				<1.2:1					35	10.7	18.4	5.6	2	5.1	0.3	0.03	7.5	3.4
TEN-3	10 meters	3	8	25	<1.2:1	8	2.4	1.4	3.5	18	5.5	9.8	3	2	5.1	2	0.19	10.5	4.8
XM240	40 meters	2	6	25	1.1:1	22	6.7	2.5	6.3	43	13.1	24.3	7.4	2.5	6.35	5.5	0.51	59	26.8
D3	20 15 10 meters	1			<1.2:1					26	7.9	4	1.2	2	5.1	0.9	0.08	11	5
D3W	17 12 meters	1			<1.2:1					34	10.4	5	1.5	2	5.1	0.9	0.08	13	5.9
D4	40 20 15 10 meters	1			<1.2:1					36	11	5.5	1.7	2	5.1	1.3	0.12	15.5	7
D40	40 meters	1			<1.2:1					42	12.8	6.5	2	2	5.1	1.7	0.16	15	6.8
AR-10	10 meters	1	3		<1.2:1					17.6	5.4			1 1/4	3.2	12/3	0.16	5	2.3
MA8040V	80/40 meters	1	0 80m 2 40m		1.1:1					22	6.7							8.8	4

Due to rapidly increasing raw material and transportation costs, call for availability and pricing.

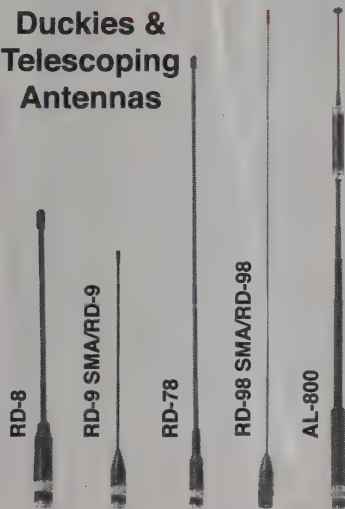
Cushcraft VHF / UHF Antennas

Model	Frequency Coverage	Ele	FWD Gain dBi	Max F/B dB	Conn	Polarization		Boom Length		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight	
						Horz	Vert	FT	M	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg
124-WB	144-148	4	10.2	24	U	Y	Y	4	1.2	3.4	1	4	1.2	2	5.1	0.34	0.03	3.5	1.6
13B2	144-148	13	15.8	26	U	Y	Y	15	4.6	3.4	1	8.9	2.7	2	5.1	1.8	0.17	9.5	4.3
17B2	144-145	17	18	26	N	Y	N	31	9.4	3.4	1	17.3	5.3	2	5.1	3.9	0.36	18	8.2
224-WB	222-225	4	10.2	24	U	Y	Y	3	0.09	2.2	0.7	3	0.9	2	5.1	0.23	0.02	2.5	1.1
A50-3S	50-54	3	8	20	U	Y	N	6	1.8	9.8	3	6	1.8	2	5.1	1.8	0.17	8.5	3.9
A50-5S	50-54	5	10.5	24	U	Y	N	12	3.7	9.8	3	7.5	2.3	2	5.1	2.7	0.25	13	5.9
A50-6S	50-54	6	11.6	26	U	Y	N	20	6.1	9.8	3	11	3.4	2	5.1	4.5	0.42	22	10
A148-3S	144-148	3	7.8	25	U	Y	Y	2.8	0.9	3.3	1	2.8	0.9	2	5.1	0.27	0.03	3	1.4
A148-10S	144-148	10	13.2	24	U	Y	Y	12	3.7	3.3	1	6	1.8	2	5.1	1.2	0.11	6	2.7
A148-20T	144-148	20	13	20	U	Y	Y	10.8	3.3	3.3	1	6.8	2.1	1.5	3.8	1.4	0.13	7.5	3.4
A449-6S	440-450	6	10.5	18	U	Y	Y	2.9	0.09	1.1	0.3	2.9	0.9	2	5.1	0.3	0.03	2.5	1.1
A430-11S	430-440	11		20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6
A449-11S	440-450	11	13.2	20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6
AR270	144-148	1	3		U		Y			3.75	1.13			2	5.1	0.27	0.03	2	0.9
	430-450	1	5.5		U		Y												
AR270B	144-148	1	5.5		U		Y			7.7	2.3			2	5.1	0.47	0.044	2.4	1.09
	430-450	1	7.5		U		Y												
A270-6S	144-148	3	7.8	20	U	Y	Y	2.8	0.09	3.4	1	2.8	0.9	2	5.1	0.3	0.03	3.5	1.6
	430-450	3	7.8	18	U														
A270-10S	144-148	5	10	20	U	Y	Y	6.2	1.9	3.4	1	6.2	1.9	2	5.1	0.73	0.07	5	2.3
	440-450	5	10	18	U														
A627013S	6m,2m,70cm	5	8 6m 10 2m 10 70cm	20	U	Y	Y	8.8	2.56	9.7	3	6.16	1.87	2	5.1	2.52	0.23	9.5	4.3
AR-6	50-54		3		U	N	Y			10.1	3.1			1.25	3.2	0.37	0.03	4	1.8
AR-2	135-160		3		U	N	Y			3.9	1.2			1.25	3.2	0.21	0.02	2	0.9
AR-450	440-460		3		U	N	Y			1.4	0.42			0.75	0.88	0.1	0.01	2	0.8
ARX-2	137-160				U	N	Y			9.3	2.8			1.25	3.2	0.33	0.03	2.5	1.1
ARX-2B	134-164		7		U	N	Y			14	4.3			1.25	3.2	0.5	0.05	3.5	1.6
ARX-220B	220-225		7		U	N	Y			9.3	2.8			1.25	3.2	0.3	0.03	3	1.4
ARX-450B	435-450		7		U	N	Y			5	1.5			1	1.5	0.2	0.02	2	0.9

Antennas for Handhelds

PRYME®
Radio Products

Duckies & Telescoping Antennas



VHF / UHF Dualband Antennas

RD-2 SMA

2m / 440 MHz, 2" tall small duck, SMA connector. **HRO Price \$19.95**

RD-6

2m / 440 MHz, flexible 6.5" tall HT antenna, gold plated BNC connector. **HRO Price \$17.95**

RD-9

2m / 440 MHz, thin 7" antenna, BNC connector. **HRO Price \$18.95**

RD-9 SMA

2m / 440 MHz, thin 7" antenna, SMA connector. **HRO Price \$21.95**

RD-78

2m / 440 MHz, flexible 15" tall HT antenna, 2.15 dB / 3.2 dB gain, gold plated BNC connector. **HRO Price \$22.95**

RD-98

2m / 440 MHz, 17" tall, 1/16" diameter HT antenna, BNC connector. **HRO Price \$24.95**

RD-98 SMA

2m / 440 MHz, 17" tall, 1/16" diameter HT antenna, SMA connector. **HRO Price \$27.95**

AL-800

2m / 440 MHz, telescoping antenna, extends to 34", collapses to 10". Whip replaceable with 9" rat tail (included), 3.2/5.5 dB gain, gold plated BNC connector. **HRO Price \$34.95**

On-Glass

LARSEN®
ANTENNAS

Single Band 1/2-Wave

Larsen's full selection of on-glass antennas for single-band and dual band use are described on page 99. All single band antennas are pre-cut. A single 1/2 wave design provides 2.4 dB gain.

KG-144-PL 2 M HRO Price \$69.95
KG-440-PL 440 MHz HRO Price \$54.95

Find more on-glass antennas on pages 75 & 99.

2m / 70 cm Mobiles

Maldol

Dual Band Antennas – 2m / 70 cm

Model	MaxPwr	Gain	Lgth	Conn	Finish
EX-107RB	80 W	2.6 / 4.9	29"	PL-259	Black
EX-107RBNMO	80 W	2.6 / 4.9	29"	NMO	Black

LARSEN®
ANTENNAS

Dual Band Antenna – 2 m / 70 cm

Model NMO 2/70

Band	Freq MHz	Gain	Weight oz	HRO Price
2m	144-148	2.5 dB	3.9	\$69.95
70cm 5/8 collinear	440-450	5.5dB		

Austin

Dual-Band Mobile Antennas

Model	Band	Freq MHz	Gain	Weight oz	HRO Price
500C	2m	144-148	Unity	6	\$45.95
	70 cm	440-450			
Metropolitan	2m	144-148	Unity	6	\$58.95
	220	220-225			
	70 cm	440-450			

Find more dual-band antennas on these pages:

COMET

See Page 95

DIAMOND
ANTENNA

See Page 101

Duplexers

When using a single antenna with mobile radios that have separate 2 meter and 440 MHz outputs, you must use a duplexer.

Comet Antenna has a wide variety of duplexers & triplexers with gold-plated connectors, high isolation and the highest power handling abilities. See page 97.

Diamond has a wide collection of duplexers and triplexers for coupling antennas and transceivers. See page 101.

Visit www.hamradio.com

YAESU

HF / VHF / UHF Mobile Antenna

ATAS-120

SCALL – HRO Price

The ATAS-120 provides HF / VHF / UHF coverage with automatic motorized tuning. Controlled from the transceiver, it adjusts the radiator length for best SWR. Compatible with Yaesu's FT-100, FT-847, FT-857, and FT-897.

HF / VHF / UHF Portable Field Antenna

ATAS-25

SCALL – HRO Price

The ATAS-25 has radiating elements covering amateur bands 10-40 m, 6 m, 2 m, and 70 cm. Mounts to a standard camera tripod (not included). Uses a manual tuning system. Dual frequency operation possible with a duplexer (not included). Antenna collapses to less than two feet to carry; expands to 7.2 foot maximum height. This is an ideal system to use with the FT-817, FT-897, and FT-857 transceivers. Weight is 2.05 pounds.

**Ham
Sticks®**

Limited Quantities

Ham Sticks® are two-piece mono-band antennas consisting of a hollow fiberglass base section, a loading coil wound directly onto the fiberglass, with a covering of PVC shrink tubing. The black oxide brass base fitting has 3/8" X 24 male threads that fit most amateur mobile mounts.

The top section is a tapered 17-7 PH tempered stainless steel whip that telescopes into the base section for frequency adjustment. The assembled antenna is about 7' long.

Ham Sticks		HRO
Model	Band	Price
9175	75 m	\$32.95
9160	60 m	\$32.95
9140	40 m	\$30.95
9130	30 m	\$30.95
9120	20 m	\$30.95
9117	17 m	\$30.95
9115	15 m	\$30.95
9112	12 m	\$30.95
9110	10 m	\$30.95
9106	6 m	\$30.95



Hustler delivers reliability and performance Beyond Your Expectations!

VHF / UHF Base Antennas

2m Verticals

These easy-to-assemble verticals are made of aluminum and high-strength fiberglass. When disassembled the longest part is about 4'. Choose 3, 6, or 7 dB gain and the overall length that best suits your application.

G7- 144

G7-144

HRO Price \$199.95

- Frequency range: 144-148 MHz.
- Bandwidth: 4 MHz.
- Gain: 7 dB.

G6-144B

HRO Price \$139.95

- Frequency range: 143-149 MHz.
- Bandwidth: 6 MHz.
- Gain: 6 dB.

G3-144

HRO Price \$69.95

- Freq. Range: 144-148 MHz
- Bandwidth: 4 MHz.
- Gain: 3dB.

220 & 440 Verticals

G7-220

HRO Price \$185.95

The G7-220 is of similar design and construction as the G7-144.

- Freq. Range: 220-225 MHz.
- Bandwidth: 5 MHz.
- Construction: High strength fiberglass and aluminum.
- Gain: 7 dB.

G6-440

HRO Price \$199.95

The G6-440 is of similar design and construction as the G6-270R.

- Frequency range: 440-450 MHz.
- Bandwidth: 10 MHz.
- Construction: One piece radome.
- Gain: 6 dB.

Repeater Antennas

The Spirit Series

Hustler's omnidirectional, collinear design base station antennas are enclosed in a rugged fiberglass radome that will help minimize pattern variations due to high winds or extreme conditions. Models are available for 144, 220, 440, 900 MHz, and 1.2 GHz. The gain will be unity, 3, 6, 9, or 12 dB depending on the frequency.

Call HRO for quotes on custom frequencies.

2m / 440 MHz Dual Band

G6-270R

Dual band
2 m / 70 cm

HRO Price \$199.95

The G6-270R is a combination G6-144B and G6-440. It is factory tuned for quick and easy installation.

- Frequency range: 144-148 MHz / 435-445 MHz.
- Gain: 6 dB.
- Bandwidth: 4 MHz – 2 m / 10 MHz – 70cm.
- One piece radome.
- VSWR: < 1.5:1 @ resonance.

HF Base Antennas

HF Multi-band

6-BTV

10, 15, 20, 30, 40, 75/80 m

HRO Price \$219.95

5-BTV

10, 15, 20, 40, 75/80 m

HRO Price \$199.95

4-BTV

10, 15, 20, 40 m

HRO Price \$169.95

- Broadbanded, low VSWR at band edges.
- Power capability – full legal limit on SSB or CW.
- Solid one-inch fiberglass trap forms for optimum electrical and mechanical stability.
- Heavy wall, high strength aluminum tubing, heavy duty aluminum mounting bracket and low loss, high strength insulators.
- Stainless steel clamps and hardware.
- Easy assembly and tuning.
- Single line feed with any length of 50 ohm coax used as ground mount with or without radials, or elevated mount with radials.
- All the BTV's can be mounted in a piece of PVC and disguised as a flagpole in deed restricted neighborhoods.



5-BTV

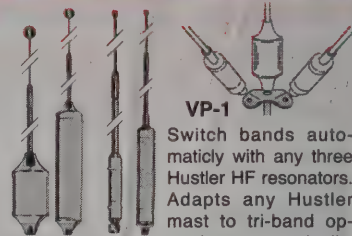
Model 30-MTK

30 meter add on kit for the 4 and 5-BTV

BASE ANTENNAS

HF Resonators

Customize your HF mobile system with Hustler products. Resonators may be used separately on one of the masts or up to three at a time with the VP-1. Add the QD-2, springs and mounts as needed for your installation.



VP-1

Switch bands automatically with any three Hustler HF resonators. Adapts any Hustler mast to tri-band operation automatically.

\$6.95

Hustler HF Resonators

Model	Type	Band	Power SSB	Bandwidth 2:1 SWR	Weight lbs	HRO Price
RM-10	Standard	10 m	400 W	150-250 KHz	0.41	\$19.95
RM-11	Standard	11 m	400 W	150-250 KHz	0.41	\$19.95
RM-12	Standard	12 m	400 W	90-120 KHz	0.41	\$19.95
RM-15	Standard	15 m	400 W	100-150 KHz	0.42	\$19.95
RM-17	Standard	17 m	400 W	120-150 KHz	0.44	\$28.95
RM-20	Standard	20 m	400 W	80-100 KHz	0.46	\$28.95
RM-30	Standard	30 m	400 W	50-60 KHz	0.84	\$29.95
RM-40	Standard	40 m	400 W	40-50 KHz	0.84	\$30.95
RM-60	Standard	60 m	400 W			\$30.95
RM-75	Standard	75 m	400 W	25-30 KHz	1.05	\$32.95
RM-80	Standard	80 m	400 W	25-30 KHz	1.05	\$32.95
RM-10-S	Super	10 m	1 kW	250-400 KHz	1	\$27.95
RM-15-S	Super	15 m	1 kW	150-200 KHz	1.2	\$30.95
RM-20-S	Super	20 m	1 kW	100-150 KHz	1.25	\$34.95
RM-40-S	Super	40 m	1 kW	50-80 KHz	1.8	\$43.95
RM-75-S	Super	75 m	1 kW	50-60 KHz	2.1	\$59.95
RM-80-S	Super	80 m	1 kW	50-60 KHz	2.1	\$59.95

Hustler Base Antennas

Model	Band	Gain	Connector	Height ft(m)	HRO
G7-144	2m	7 dB	N Female	16.3 (4.6)	\$199.95
G6-144B	2m	6 dB	SO-239	9.8 (2.9)	\$159.95
G3-144	2m	3 dB	SO-239	7.5 (2.3)	\$69.95
G7-220	220 MHz	7 dB	N Female	10.2 (3.0)	\$185.95
G6-440	440 MHz	6 dB	N Female	7.3 (2.2)	\$199.95
G6-270R	2m / 70 cm	6 dB	N Female	7.6 (2.3)	\$199.95
6-BTV	10-30-80 m			24.0 (7.2)	\$219.95
5-BTV	10 to 80 m			25.0 (7.5)	\$199.95
4-BTV	10-40 m			21.4 (8.4)	\$169.95

Hustler VHF / UHF Mobile Antennas

Model	Band	Gain	Power	Mount	HRO
LMC-270	2m/70 cm	2.4/4	100	NMO	\$36.95
MX-270	2m/70 cm	2.4/4	100	Mag	69.95
LMG-144	2m	3.4	200	NMO	27.95
LMG-440-5	440	5	200	NMO	27.95
LMC-144	2m	3.4	200	NMO	27.95
LMC-440-5	440	5	200	NMO	24.95
LMB-144	2m	3.4	200	NMO	22.95
LMB-440-5	440	5	200	NMO	24.95
BBG-144	2m	3.4	200	NMO	64.95
BBG-440-5	440	5	200	NMO	59.95
BBGT-144	2m	3.4	200	Trunk	52.95
BBGT-440-5	440	5	200	Trunk	55.95
MX-2	2m	3.4	200	Mag	39.95
MX-220	220	3.4	200	Mag	39.95
MX-440	440	5	200	Mag	63.95
MX-2B	2m	3.4	200	Mag	44.95
MX-440B	440	3.4	200	Mag	53.95
SF-2	2m	3.4	100	3/8X24	17.95
SF-220	220	3.4	100	3/8X24	17.95
RX-2	2m	3.4	100	Mag	29.95
RX-220	220	3.4	100	Mag	29.95
RG-440	440	5	100	Mag	29.95
CG-144	2m	5.2	200	3/8X24	39.95
CG-220	220	5.2	200	3/8X24	39.95
CGT-144	2m	5.2	200	Trunk	63.95
CGT-220	220	5.2	200	Trunk	63.95
THF	140-500	Unity	200	Trunk	26.95
UHT-1	140-500	Unity	200	3/4 hole	17.95
UGM	140-500	Unity	25	Mag	23.95

MOBILE ANTENNAS / MOUNTS

VHF / UHF Mobile Antennas

Dual Band

Dual band models for 2m / 440 MHz give you 2.4 dB / 4 dB gain. The antennas are rated at 100 Watts.

LMC-270

- NMO style coil
- Chrome top
- Coil and whip only

MX-270

- Chrome top.
- NMO style magnetic mount.
- 17 ft RG58/U coax.
- PL-259 connector.

Magnetic Mounts

Models for 2m, 220 and 440 MHz are power rated for 200 Watts. Each has an NMO-style coil and a magnetic mount.

- MX-220 144 MHz 3.4 dB gain
- MX-220 220 MHz 5.0 dB gain
- MX-440 440 MHz 5.0 dB gain

- Chrome top.
- 10 oz magnet.
- 17 ft RG58/U coax.
- PL-259 connector.

- MX-2B 144 MHz 3.4 dB
- MX-440B 440 MHz 5.0 dB

- Same as above but all black coil.

Collinear

Collinear models for 2m and 220 MHz provide 5.2 dB gain. They are power rated for 200 Watts. All have a swivel ball for vertical positioning.

- CG-144 6 MHz bandwidth
- CG-220 4 MHz bandwidth
- 3/8"x24 thread
- 5/8 over ~ wave.

- CGT-144 6 MHz bandwidth
- CGT-220 4 MHz bandwidth
- Trunk mount base.
- 17 ft RG58/U coax.
- PL-259 connector.

Unity Gain

An antenna to custom trim as needed for VHF or UHF frequencies. Covers 140-500 MHz.

- THF Trunk Lip Mount

- UHT-1 Roof/Deck Mount

- UGM Magnet Mount



Coil and Whip

Models for 2m or 440 MHz are power rated for 200 Watts. NMO-style coil on each requires an NMO mount.

- LMG-144 3.4 dB gain
- LMG-440-5 5.0 dB gain
- Chrome top and bottom.
- Contact- silver plated push pin.

- LMC-144 3.4 dB gain
- LMC-440-5 5.0 dB gain
- Black coil with chrome top.

- LMB-144 3.4 dB gain
- LMB-440-5 5.0 dB gain
- Black coil.

- BBG-144 3.4 dB gain
- BBG-440-5 5.0 dB gain
- Chrome top, swivel ball and spring

- BBGT-144 3.4 dB gain
- BBGT-440-5 5.0 dB gain
- Includes trunk mount.
- 17 ft RG58/U coax.
- PL-259 connector.

5/8 Wave

Base-loaded 5/8 wave models for 2m, 220 and 440 MHz are power rated for 100 Watts.

- SF-2 144 MHz 3.4 dB gain
- SF-220 220 MHz 3.4 dB gain
- 3/8" x 24 thread.
- Mount to any Hustler mount.

- RX-2 144 MHz 3.4 dB gain
- RX-220 220 MHz 3.4 dB gain
- RX-440 440 MHz 5.0 dB gain
- 3 oz magnetic mount.
- 15 ft RG-58/U coax.
- PL-259 connector.

Accessories



Used to convert RX Series, SF Series, & C6 Series to fix station operation. Contains three radials. Mount can accept any 3/8 x 24 threaded mount.



QD-2 Quick Disconnect
Remove antennas easily with a push and twist release. Compression design of 100% stainless steel. 3/8 x 24 threads. \$24.95

Mobile Mounts

- **BM-1** Bumper mount with stainless steel strap and 1" diameter ball with 3/8 x 24 threads. \$27.95

- **MBM** Powerful 5" diameter magnet with 3/8 x 24 threads. 16" of RG58U coax with PL-259 connector. \$24.95

- **SSM-1** Heavy duty ball mount with 4" stainless steel spring with copper braided center conductor to prevent detuning. 180 degree adjustable 2" diameter stainless steel ball. Accepts 3/8 x 24 antennas. \$56.95

- **SSM-2** Heavy duty 2" diameter stainless steel ball mount. 180 degree adjustable. Accepts 3/8 x 24 antennas. \$33.95

- **SSM-3** Heavy duty stainless steel 4" spring with 3/8 x 24 coupling stud. Copper braided center conductor to prevent detuning. \$31.95

- **C-32** Chrome plated 1" ball mount. Accepts 3/8 x 24 antennas. \$22.95

- **C-29** Stainless steel 4" spring. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. \$22.95

- **C-30** Chrome plated 4" spring. Copper braided center conductor to prevent detuning. \$16.95

- **RSS-2** Stainless steel 3" spring. Used for mobile antenna between resonator and mast. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. \$14.95

- **HLM** Trunk lip mount designed for hatch and slanted back vehicles. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$27.95

- **HOT** Trunk lip mount with easy off/on with thumb knob. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$27.95

- **TLM** Trunk lip mount which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$25.95

- **RVM** Recreational vehicle mount with heavy duty bracket. Easy antenna removal or lay down with thumb knob. 1" ball accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$24.95

All mounts below are supplied with 17" RG-58U cable.

Model	Description	HRO Price
CHMA	3/8" Hole mount without connector	\$14.95
CHMA-B	3/8" Hole mount w/crimp-on BNC	16.95
CHMA-P	3/8" Hole mount w/crimp-on PL-259	16.95
CHMA-T	3/8" Hole mount w/crimp-on TNC	16.95
CHMA-U	3/8" Hole mount w/crimp-on Mini UHF	16.95
CHMB	3/4" Hole mount without connector	14.95
CHMB-B	3/4" Hole mount w/crimp-on BNC	16.95
CHMB-P	3/4" Hole mount w/crimp-on PL-259	16.95
CHMB-T	3/4" Hole mount w/crimp-on TNC	16.95
CHMB-U	3/4" Hole mount w/crimp-on Mini UHF	16.95
CMMA	NMO 10 oz mag w/solder-on PL-259	24.95
CTMA	Trunk mount without connector	18.95
CTMA-B	Trunk mount w/crimp-On BNC	21.95
CTMA-P	Trunk mount w/crimp-On PL-259	21.95
CTMA-T	Trunk mount w/crimp-On TNC	21.95
CTMA-U	Trunk mount w/crimp-On Mini UHF	21.95

Mobile Masts

Fold-Over Masts

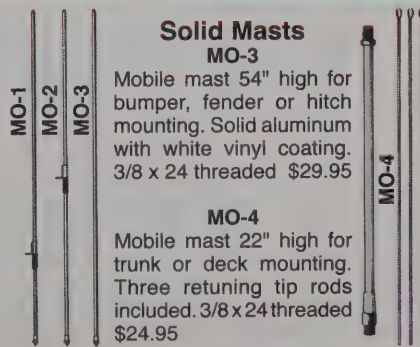
MO-1
Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 15" above base. 3/8 x 24 threaded \$39.95

MO-2
Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 27" above base. 3/8 x 24 threaded \$39.95

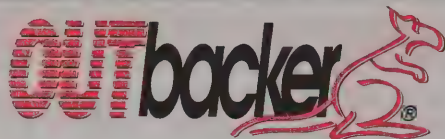
Solid Masts

MO-3
Mobile mast 54" high for bumper, fender or hitch mounting. Solid aluminum with white vinyl coating. 3/8 x 24 threaded \$29.95

MO-4
Mobile mast 22" high for trunk or deck mounting. Three retuning tip rods included. 3/8 x 24 threaded \$24.95



HF MOBILE ANTENNAS



The Ultimate All-Band
HF Mobile Antennas

Perth & Perth Plus Antennas

HRO Prices:
Perth \$329.95
Perth Plus \$329.95

The Perth covers 10-80 meters and the Perth Plus adds the 6 m and 2 m bands. Both are sleek 3-1/2 foot stingers with a 4 foot main shaft where the taps are located. They have a tough, yet flexible fiberglass core, helically wound with copper wire hand tuned to the various "tap" frequency points. Both offer high performance with low wind drag. Mount them easily on a trunk lip, hatch, or bumper with a standard 3/8 X 24 stud. The stinger retracts into the main shaft for easy storage. With a proper ground plane, Perth antennas are also suitable for apartment and condo installations.



Alpha Delta Outpost™ Tripod / Ground Coupler Ground Mount System

HRO Price \$275.95

- Matches the base impedance of all Outbacker® antennas.
- Fold-over 3/8 x 24 SO-239 top mount.
- Constructed of aircraft 6061-T6 aluminum, stainless steel hardware and wing nuts.
- No digging—no holes in ground—no concrete.
- Fold-out legs act as a large capacitor providing proper coupling to the ground and proper base impedance to the antenna. Fold-up design for 10-minute installation.

MicroMount

HRO Price \$49.95

For use with the "Joey," Micro-Mount has a fixed height of 8" with a 12" diameter footprint on 3 legs. It folds to an 8" length. Has a fully articulated pan head mount. Includes a 12" velcro strap to mount to most anything. Includes a 3 counterpoise system and weighs less than 10 ounces.

Outbacker Antenna

HRO Price \$319.95

With the Outbacker® there is no need to change coils when changing HF bands. The antenna comes in a six foot version that handles up to 300 watts PEP and a four foot Junior model for up to 150 watts PEP. The antennas are made of fiberglass coated with smooth epoxy resin and polyurethane. The pre-tuned copper helical winding has connection sockets constructed of rust-free brass, clearly marked for each band. The antenna covers all bands from 10 to 80 meters. Mount the antenna with a standard 3/8 X 24 thread. Use Hustler's BM-1 or SSM ball mounts. Optional heavy duty spring and 2" base can be mounted at the bottom of the antenna and attached to a PL-259.

Outreach Antenna

HRO Price \$419.95

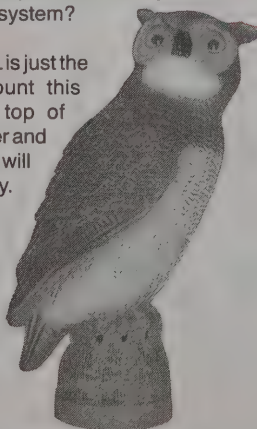
- A portable antenna system for limited-space or temporary installations.
- All bands, 160–10 meters, including WARC and only 12 ft. tall!
- 10, 12, and 15 meters are 5/8 wave; all bands are center loaded for peak performance.
- Handles 150 watts P.E.P.
- Split 8 foot shaft and 4 foot stinger—antenna breaks down to 4 feet for easy portability.
- Ends in standard 3/8 x 24 base.
- Uses Outbacker's® band tap system.

The Owl

Want to keep those birds off your antenna system?

The OWL is just the trick. Mount this fella on top of your tower and the birds will stay away.

**HRO
Price
\$19.95**



Tarheel Antennas

Little Tarheel II
3.5 – 54 MHz Mobile
HRO Price \$CALL



When properly installed on your vehicle the Little Tarheel II will provide continuous coverage from 3.5 to 54 MHz with the supplied whip. Like all of our motorized antennas, this model meets the highest standards but in a smaller size. It comes with sensors pre-installed so if you decide to add one of the auto controllers (SDC-100 Simple Controller, SDC-102 Programmable Controller, Turbo Tuner, Antenna BOSS and BOSS II) now or later, everything is ready.

This antenna is for the person who wants to enjoy HF mobile with a more compact antenna. Don't let the small size fool you. The Little Tarheel II mounts higher on the vehicle so you have less ground loss and higher performance. Because of its smaller size, this antenna offers the convenience of a more common type of mount like the Diamond K400 Series, the Comet Series, or similar 3/8" stud type mount.

The Little Tarheel II comes as a package. All you need is a mount and a nice HF radio. Included standard with the antenna is: the whip, 20 feet of plug and play control cable, manual control box, ferrite decoupling core and 3/8-24 stud. The antenna is finished with our Dupont Imron 5000 system in standard colors of black, white, red or silver. It also comes with the tough Lexan™ Weather Shield like its big brothers. This model also uses the commercial 12 volt gear motor.

The antenna has a **ONE YEAR NO MATTER WHAT WARRANTY** to the original owner.

Specifications:

- Lower Mast Size – 1 1/2"
- Lower Mast Length – 16"
- Whip Length – 32"
- Total Length of Antenna in 54 MHz position – 48"
- Total Length of Antenna in 3.5 MHz position – 54"
- Frequency Coverage Continuous – 3.5 to 54 MHz
- Power Rating – 200 watts P.E.P.
- Typical SWR – 1.5 or less
- Weight – 1.9 lbs

Comet Dual-Band Antennas

MODEL	BANDS	GAIN	MAX PWR Watts	CONN	WGT Lbs' oz"	LEN FT' In"	MAX Wind Speed MPH	HRO Price
Dual Band Base Station Repeater Antennas								
GP-9/GP-9N	2m/70cm	8.5/11.9	200	SO/N	5'11"	16'6"	90	\$199.95
GP-6	2m/70cm	6.5/9.0	200	SO-239	3'8"	10'5"	90	\$149.95
GP-3	2m/70cm	4.5/7.2	200	SO-239	2'12"	5'11"	112	\$99.95
GP-1	2m/70cm	3.0/6.0	200	SO-239	2'	4'2"	135	\$74.95
Dual Band Mobile Antennas - All Black Anodized								
SBB-7/SBB-7NMO	2m/70cm	4.5/7.0	70	PL/NMO	-	4'7"	-	\$79.95
SBB-5/SBB-5NMO	2m/70cm	3.0/5.5	120	PL/NMO	-	3'2"	-	\$58.95
SBB-2/SBB-2NMO	2m/70cm	2.15/3.8	60	PL/NMO	-	20"	-	\$42.95
B-10/B10NMO	2m/70cm	-2.15	50	PL/NMO	-	12"	-	\$42.95
Dualband Mobile Antennas								
AX-50	2m/70cm	0/5.0	60	PL-259	-	21"	-	\$49.95
AX-75	2m/70cm	3.2/5.7	60	PL-259	-	2'6"	-	\$59.95
AX-95	2m/70cm	3.3/5.8	60	PL-259	-	3'2"	-	\$66.95

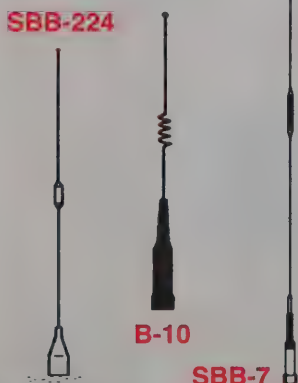
Comet Tri-Band Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	WGT Lbs' oz"	LEN FT' In"	Max Wind Speed MPH	HRO Price
TrBand Base Station Repeater Antennas								
GP-15	6m/2m/70cm	3/6.2/8.6	200	SO-239	2'15"	7'11"	90	\$169.95
GP-98	2m/70cm/23cm	6.5/9.0/13.5	100	N-Female	3'6"	9'4"	90+	\$199.95
CX-333	2m/220/70cm	6.5/7.8/9.0	120	SO-239	3'10"	10'2"	112	\$179.95
TriBand Mobile Antennas								
SB-15	6m/2m/70cm	2.15/4.5/7.2	120	PL-259	-	4'10"	-	\$89.95
SBB-97	2m/70cm/23cm	3.0/6.8/9.6	100	N-Male	-	3'3"	-	\$84.95
SBB-94	2m/70cm/23cm	2.15/5.1/7.2	60/30 (1.2)	N-Male	-	24"	-	CALL
SBB-224	2m/220/70cm	2.15/3.2/5.5	150	PL-259	-	3'1"	-	\$78.95
SBB-224NMO	2m/220/70cm	2.15/3.2/5.5	150	NMO	-	3'1"	-	\$78.95
HF Antennas								
UHV-6	40/(20*)/(17*)15/10/6/2m/70cm	HF 0 dBi 2m 2.15 dBi 70cm 5.5 dBi	120 SSB HF 100W FM 6-70cm	PL-259	MAX 1'4"	MAX 6'4"	-	\$159.95
*L-14	Opt 20M coil for UHV-6						-	\$31.95
*L-18	Opt 17M coil for UHV-6						-	\$29.95
*L-3.5	Opt 75/80MM coil for UHV-6						-	\$34.95
HMC-6S	*40/20/15/10/6/2 M/70cm	HF 0 2M./2.15dBi 70cm 5.3dBi	120W SSB HF 150W FM 6/2/70cm					\$159.95
HMC-7C	Opt 40MM coil for HMC-6S							\$34.95
CHA-250B	Ground Plane 3.5-57 MHz		150W SSB HF 125W CW	SO-239	7'11"	23'8"	67.5	\$399.95

Dual- & Tri-band VHF / UHF

Comet developed the Super Linear Converter (SLC) to increase actual gain of dual and triband antennas.

- A complete pre-formed phasing coil and phosphorus copper element eliminates additional components and gain loss.
- The SLC is electrically very efficient, providing a low angle of radiation, directly to the horizon.
- Comet sectional antennas use ABS (Transparent to RF) connecting joints for the finest pattern and easiest assembly.





Comet 2m and HT Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	LEN FT"ln"	HRO Price
Single Band Antennas						
SBB-25/SBB-25NMO	2m	4.1	100	PL-259/NMO	4'8"	\$48.95
HT Antennas						
CH-32 MINI Ant	2m/70cm	—	10	BNC	1.75"	\$33.95
MH-510	6m/2m/70cm	0/0/3.2	10	SMA	20.75"	\$37.95
MH-511	6m/2m/70cm	—	10	SMA	4.25"	\$33.95
HT-224	2m/220/70cm	1.3/1.4/1.8	10	SMA	11"	\$47.95
MH-610	2m/220/70cm	0/1.8/3.2	10	SMA	14"	\$49.95
SMA-501 MINI Ant	2m/70cm	—	10	SMA	1.5"	\$29.95
SMA-3	2m/70/23cm	1.2/1.7/3.4	—	SMA	9.75"	\$41.95
SMA-24	2m/70cm	2.15/5.3	20	SMA	17.5	\$24.95
BNC-24	2m/70cm	—	20	BNC	17.5	\$24.95
SMA-503	2m/70cm	—	10	SMA	8.5"	\$29.95
CH-75	2m/70cm	—/3.2	50	BNC	14.75	\$25.95
SH-95	2m/70/23cm	1.5/2/5.5	10	BNC	15"	\$34.95

6 Meter Antennas

MODEL	Description	FREQ	GAIN	F/B	Max Pwr Watts	CONN	SWR	LEN FT"ln"	HRO Price
CA-52HB4	4 element beam	50-54 MHz	—	19 dB	400 W PEP	SO-239	<1.5:1	10'6 Boom	\$119.95
GH-50	Vertical (no radials)	50-54 MHz	2.15	—	60 FM	SO-239	<2.0:1	7'11 Ht	\$99.95

Comet Mobile Mounting Systems

Comet has a wide variety of mobile mounts. Choose the mount and coax cable assembly that best fits your personal needs. All Comet cables have detachable connectors.

MODEL	DESCRIPTION	HRO Price
Mounts with Coax Cable Installed		
CP-5M	Universal multi-angle lip mount w/deluxe cable SO-239/PL-259 Conn.	\$69.95
CP-5NMO	Same as CP-5M but with NMO/PL-259 Conn.	\$69.95
CP-5 3/8-24	Same as CP-5M but with 3/8-24/PL-259 Conn.	\$69.95
GR-5M	Deluxe trunk-lip mount w/CK-3M5 Cable, UHF connectors	\$67.95
GR-5N	Deluxe trunk-lip mount w/CK-5N Cable, N-Type connectors	\$69.95
CM-5M	Standard Hvy-Duty Mag Mt w/RG-58A/U, Coax, UHF Conn, Max Antenna Height 4 ft	\$24.95
Mounting Brackets Only, No Coax		
RS-730	Heavy Duty universal lip mount, accepts SO-239 connector	\$32.95
RS-720	Medium Duty universal lip mount, accepts SO-239 connector	\$29.95
RS-720NMO	Medium Duty universal lip mount, accepts NMO connector	\$29.95
RS-520	Light Duty universal lip mount, accepts SO-239 connector	\$29.95
EM-B80	Light Duty universal lip mount, accepts SO-239 connector	\$25.95
Coax Cable Assemblies		
CK-3M5	17 ft high quality cable inc 12" RG-188 to avoid water leak/cable damage. UHF Conn.	\$42.95
CK-3M	Same as CK-3M5 but 9' 9" of deluxe cable assy, UHF Conn.	\$35.95
CK-5N	13' 6" of deluxe 2-step cable assy, N- Conn.	\$49.95
5D4N	13' 6" low loss (2400MHz) coax cable, N-conn.	\$34.95
3D4N	13' 6" low loss (1200MHz) cable assy, N-conn.	\$28.95
Antenna Connector Adapters		
AD-25M	Turns an SO-239 mount into an NMO mount	\$14.95
AD-15M	Turns an NMO mount into an SO-239 mount	\$17.95
AD-10M	Turns an NMO mount into an N-female mount	\$17.95

2m / 440 MHz

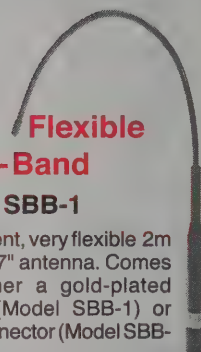
2m / 440
MHz

**Mobile Antenna
Now with NMO
Connector**

CA-2x4SRNMO

Comet's popular CA-2x4SR broad-band mobile antenna now is available with an NMO connector. Black anodized finish. 3.8 / 6.2 dBi gain.

HRO Price \$xx.95



**Flexible
Dual-Band
SBB-1**

Convenient, very flexible 2m / 70 cm 17" antenna. Comes with either a gold-plated PL-259 (Model SBB-1) or NMO connector (Model SBB-1NMO).

Gain:

146 MHz 1.5 dBi 1/4 wave
446 MHz 2.15 dBi 1/2 wave

Max Power: 60 Watts

VSWR: 1.5:1 or less

HRO Price \$42.95

**Dual-Band Mag
Mount Antenna
M-24**

Economical black anodized 2m / 440 MHz antenna is 19.5" tall and comes with 13 feet of RG-58/U coax and either a gold-plated PL-259 (Model M-24M) or BNC connector (Model M-24B) or model M-24S (SMA) soldered on.

Gain 146 MHz:

1.7 dBi 3/8 wave

Gain 446 MHz:

4.1 dBi 1/4 + 5/8 wave

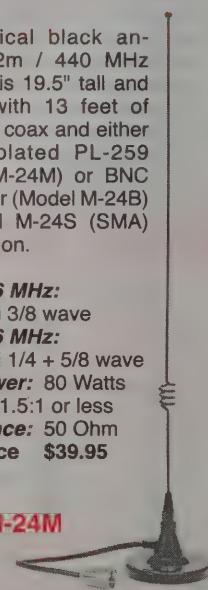
Max Power: 80 Watts

VSWR: 1.5:1 or less

Impedance: 50 Ohm

HRO Price \$39.95

M-24M



ANTENNAS / MOUNTS / DUPLEXERS

Mounts

Roof Rack Mount

RS-660U

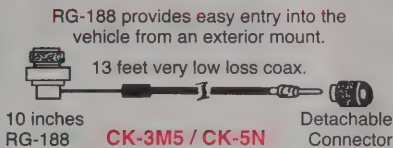
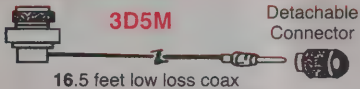
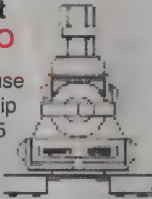


NEW!
This new roof-rack mount opens wider than the old version – up to 2.5 inches – and supports bigger antennas.

HRO Price \$xx.95

Universal Mount CP-5M / CP-5NMO

These universal mounts use the heavy-duty RS-730 lip bracket. Each includes 5 meters (16'6") of deluxe 2-step coax and an antenna mount connector: gold-plated PL-259 on coax end with detachable barrel for easy installation. 18 inch lead of mini RG-174 coax for easy entry through the weather seal. Choose the model that has the connector for the antenna you are using.



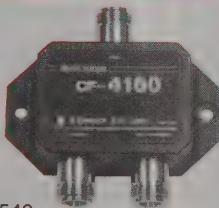
Window Gap Jumper

CTC-50M

This device crosses the space between window frames. The frequency range is up to 1.3 GHz with SO-239 connectors. Max pwr HF 100 W PEP, VHF 60 W, UHF 40 W, low loss, 50 ohm impedance. HRO Price \$54.95

Duplexer

All-Female Duplexer CF-4160N



NEW!
1.3-170 / 350-540 MHz duplexers with three N-female connectors allows the user to attach their own low loss jumpers in the length needed. HRO Price \$xx.95

HF Antennas

40m - 70cm Mobile Antenna

UHV-6

HRO Price \$159.95

Without HF coils attached, the UHV-6 is a tribander for 6m / 2m / 70 cm. The top of the element has a threaded socket for the 40 m, 15 m, or 10 m coils (included), making the UHV-6 a quad-band antenna.

- Optional coils for 80m, 20m, and 17m.
- Easy to mount and configure.
- Fold-over hinge included.
- GAIN on 2m: 2.15 dBi; 70cm: 5.5 dBi.
- Length 48" to approx. 76" maximum.

Quad Band 10 / 6 / 2m / 70cm

UHV-4

HRO Price \$119.95

Developed for the Yaesu FT-8900. The 10m and 6m bands tune independently and will tune for SSB and FM. Length approx. 54".



HF Rotatable Dipole CHV-5X

NEW!

The CHV-5X is a 5 band rotatable dipole covering 40 / 20 / 15 / 10 / 6 meters.

- Each band is independently tunable.
- Turning radius 7 feet. Weighs 5lb. 14oz.
- VWSR less than 1.2:1 at center frequency.
- Impedance 50 ohms. Stainless hardware.
- CBL-2500 2.5 kW balun included.
- Max power 150 W SSB 40 / 20m; 220 W SSB 15 / 10 / 6m.
- SO-239 connector. Mast Required 1- 2.5 inch.

HRO Price \$319.95

Comet High-Power Duplexers and Triplexers

Zinc-alloy, die-cast, twin cavity, low input loss, high-isolation, and high-power. Modernize your station with Comet high-performance antenna products.

MODEL	PORT	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol dB	Mix Conn	Port Conn	HRO Price
CF-416A (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads PL-259 w/leads	\$49.95
CF-416C (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	N-Female	PL-259 w/leads N-Male w/leads	\$54.95
CF-4160I (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads N-Male w/o leads	\$48.95
CF-4160K (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads PL-259 w/o leads	\$48.95
CF-416B (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads N-Male w/leads	\$49.95
CF-706A (2m/70cm)	LPF HPF	1.3-90MHz 75-470MHz	175 175	350 350	0.5 0.5	40 40	SO-239	PL-259 w/leads PL-259 w/leads	\$74.95
CF-530 (6m/125-470)	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$74.95
CF-530C (6m/125-470)*	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$74.95
CF-360A (10m/6m)	LPF HPF	1.3-30MHz 50-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$69.95
CF-706 (2m/6m)	LPF HPF	1.3-56 MHz 75-320 MHz	350 350	600 600	0.4 0.4	40 40	SO-239	PL-259 w/cable PL-259 w/cable	\$69.95
CFX-4310C (2m/70cm/1.2)	LPF BPF HPF	1.6-60MHz 100-150MHz 350-500MHz 840-1.4GHz	600 450 300 100	1KW 800 500 200	0.15 0.25 0.25 0.3	50 50 50 50	N-Female	PL-259 w/leads N-Male w/leads N-Male w/leads	\$79.95
CFX-514 (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.2 0.25 0.3	55 55 55	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	\$79.95
CFX-514J (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.15 0.2 0.25	55 55 55	SO-239	SO-239 w/o leads SO-239 w/o leads SO-239 w/o leads	\$79.95
CFX-324A (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	\$88.95
CFX-324B (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/o leads PL-259 w/o leads PL-259 w/o leads	\$85.95

* To run multiple antennas with the Yaesu FT-8900

Choosing Your Larsen Mobile Antenna

Choose your antenna configuration based on the frequency, base type (e.g., magnetic mount) and thread type (e.g., NMO). Keep in mind that it is necessary to select a base with the same mounting style as the antenna. Typical bases and styles are shown below.



Thread Types

These are examples of each of the thread types. Select one and then select the base.

Mount Configurations

In addition to the popular Motorola 3/4" (NMO) mounts shown here, mobile antennas for the Larsen mount (LM) and PO mount (PO) are excellent choices for amateur use. Each of these mounts comes in one of the thread types.

Mounts:

- NMO K premium quality rooftop.
- NMO MMR mag mount, 90# pull strength.
- NMO TLP heavy duty trunk lid.
- NMO TMB electropolished trunk gutter bracket.
- NMOHF for low or high frequencies (pull center pin in insulator for high frequencies).
- NMOHFTHK NMO thick mount (surfaces to 1/2" thick) high or low frequencies.



Magnetic Mount BNC MM BNC

Connectors: BNC on the mag and coax. Coax: RG 58 A/U, 12'

NMO Series Antennas

Select an Antenna

Once the base and thread type are selected, the final step is to choose the antenna.

All Larsen mobile antennas meet the industry's most demanding specs for electrical efficiency and mechanical durability.

Gain antennas are made of a coil and a whip. Quarter wave antennas are just a whip.

- VSWR at 1.5 to 1 or less.
- Colors: Black coil base; chrome or all black whip.
- 3-year No-Nonsense Warranty.[™]
- Made in USA

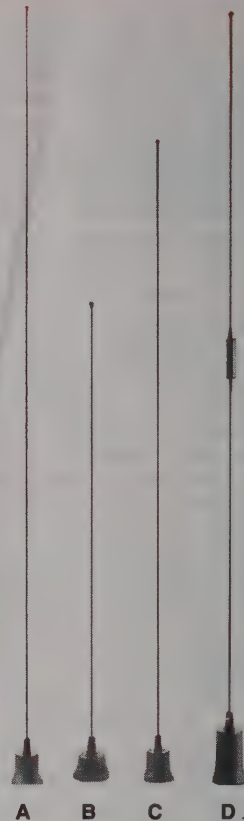
Scanner Antenna

Tri-Band Antenna NMO-

150 / 450 / 800

This is a great antenna for scanner operation. It is NOT tunable for amateur operation.

Frequency.... 150-165 /
..... 450-470 /
..... 806-940 MHz
Gain .. 2.14 dBi ± 1 dB
Mount..... NMO
Height 16.5"



A NMO 150 B (2m)
Frequency:..... 144-174 MHz
Gain:..... 3 dB
Electrical:..... 5/8 Wave
Height: 49"

B NMOQ C
Frequency:..... 144-448 MHz
Gain:..... Unity
Electrical:..... 1/4 Wave
Height: 22" max.

C NMO 220 B (1.25m)
Frequency:..... 220-225 MHz
Gain:..... 3 dB
Electrical:..... 5/8 Wave
Height: 32"

D NMO 2 / 70
Frequency:..... 144-148MHz
..... 442-448 MHz
Gain: 3.8 dB VHF; 2.4 dB UHF
Electrical:..... 5/8 wave VHF
..... Collinear UHF
Height: 2m / 70cm Dual band

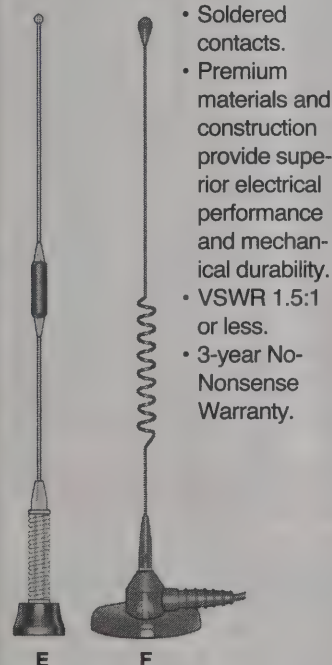
Call a
Helpful
Ham at
HRO for
Quotes
on Larsen
Antennas

MOBILE ANTENNAS

Dual-Band Antennas

Larsen dual band antennas provide excellent performance on 2m and 70cm. Each antenna is factory preset to guarantee optimal performance with no tuning required.

- Range of dual band configurations are available.
- Kulrod copper-plated 17-7 stainless steel rods for greater transmit range.



- Soldered contacts.
- Premium materials and construction provide superior electrical performance and mechanical durability.
- VSWR 1.5:1 or less.
- 3-year No-Nonsense Warranty.

E NMO 2 / 70 SH
Frequency: 144-148/440-450 MHz
Gain: Unity
Power: 100 Watts
Type: ... VHF: Center load 1/4 wave
..... UHF: Center load 3/4 wave
Base: . NMO UHF base B w/spring
Height: 17"
Whip: W NMO 2/70 SH

F MM 2 / 70 PL
Frequency: 144-148/440-450 MHz
Gain: Unity
Power: 100 watts
Coax: .. RG58 A/U Dual Shield, 12'
Pull strength: 54 lbs.
Type: ... VHF: Center load 1/4 wave
..... UHF: Center load 3/4 wave
Base: 3" round magnet mount
Connector: PL 259 installed
Weight: 1 lb.
Height: 17"

On-Glass Antennas

Larsen's advanced design techniques in glass-mount antennas result in superior transmit range plus tremendous mechanical durability. Glass mount performance is nearly identical to rooftop mounts, with no holes to drill. Properly installed on-glass antennas grip for years under demanding conditions, yet are easy to remove and remount..

- Patented low-impedance design is electrically efficient.
- Single-band antennas are precut, 1/2 wave design.
- Transformer outside vehicle.
- Copper plated whips.
- Rated 50 watts output.
- VSWR at 1.5 to 1 or less.
- Less than .5 dB loss through glass vs. rooftop.
- New circuit board technology locks in solid state performance.
- 3M's best on-glass adhesive grip.
- Made in USA with 3 year No-Nonsense Warranty™

Dual Band

The KG 2 / 70 is a VHF half-wave and a UHF collinear. It comes with 14 feet of RG-58/U coax.

The antenna installs easily on any flat surface. Remove the whip without tools for car washes or low garages. **HRO Price \$119.95**

G KG 2/70-CX-PL (Dual)
Frequency: 144-148/442-448 MHz
Gain: 2.4 dB VHF; 4.5 UHF
Power: 50 Watts
Type: 1/2 wave / Collinear
Connector: PL 259 (loose)
Height: 32-3/4"



Single Band

H KG 144 PL (2m)
Frequency: 144-160 MHz
Gain: 2.4 dB
Type: 1/2 Wave
Connector: PL 259 (loose)
Height: 45"

I KG 440 PL (70cm)
Band: 440-460 MHz
Gain: 2.4 dB
Type: 1/2 Wave
Connector: PL 259 (loose)
Height: 11-3/4"

Rubber Ducks

KulDuckies

KulDuckies have outstanding transmit range with 1.5:1 VSWR. Made of copper and brass radiators, they are scope tuned to precise frequencies. Constructed with soldered connections, plasticol dip process, injection-molded housings and silver plated contacts.

KulDuckies are available in Helical (VHF, UHF), HQ Helical (VHF), Dual Band, and Half Wave.



Dual Band
KD4 2 / 70
Amateur dual band KD antenna, BNC connector. **HRO Price \$48.00**

Helical
KD4 FREQ HQ
Helical 1/4 wave 136-222 MHz (specify frequency), 9 1/2" tall, BNC connector. **HRO Price \$30.00**

KD4 VHF
VHF helical 136-222 MHz (specify frequency), 8" tall, BNC connector. **HRO Price \$24.00**

KD4 UHF
UHF helical 406-512 MHz (specify frequency), 3" tall, BNC connector. **HRO Price \$24.00**

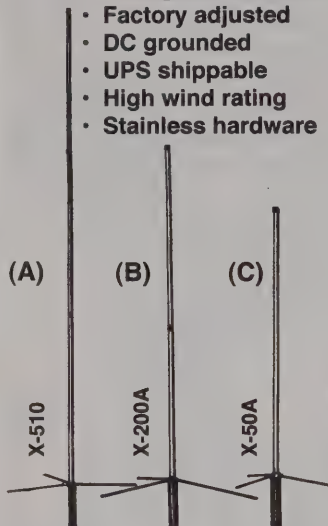
Half-Wave
KD142 MHW
Collapsible 1/2-wave 144-155 MHz, 11" to 44 1/2" tall, BNC connector. **HRO Price \$46.00**

The Standard by Which All Others are Judged

Diamond Base Antennas

All base antennas grounded for lightning protection. Factory adjusted for American amateur bands; no tuning required.

- Wide-band performance
- Highest gain
- Fiberglass radome
- Factory adjusted
- DC grounded
- UPS shippable
- High wind rating
- Stainless hardware



1. 52-54 MHz only. DPGH62 is adjustable from 50-54 MHz.
2. 15-148 MHz, 100 watts on 2m, 200 watts on 1-1/4m & 70 cm.
3. 28/50MHz 400W pep, 14/21MHz 400W pep, 7MHz 200W pep.

Model	Bands	Gain, dBi	Watts	Con. Type	WT (lbs)	Lth (ft)	MPH (no ice)	Fig	HRO Price
A502HB	6m Yagi 2 elem.	6.3 dBi	400pep	UHF	3.75	2.6			\$89.95
A144S5	2 m Yagi 5 elem.	6.0 dBi	100pep	UHF	1.4	3.1			\$59.95
A430S10	430 Yagi 10 elem.	13 dBi	100pep	UHF	1.4	3.6			\$69.95
A430S15	430 Yagi 15 elem.	14.8 dBi	100pep	UHF	2.15	7.4			\$89.95
BC200-460	450-460	6.5	200	UHF	3	5.6	130		CALL
BC200-470	460-470	6.5	200	UHF	3	5.6	130		CALL
CP-22E	2 m	6.5	200	UHF	3	9	90	B	\$54.95
CP-5H ³	40/20/15/10/6 m		200pep	UHF	6.6	11.8	80		CALL
CP-62	6m	5.5 dBi	200	UHF	9	22	80		\$219.95
CP-610	10m/6m	5.5/3.4 dBi	200	UHF	9	22	80		\$269.95
F-22A	2 m	6.7	200	UHF	5	10.5	112	B	\$99.95
F-23H	144-174 tunable	7.8	350	UHF	5	15	90	A	\$239.95
F-718	70 cm	11.5	250	N	5	15	90	A	\$209.95
G-200	2.4 GHz	11		N	3	6	135	C	\$214.95
V2000A ¹	6m / 2m / 70cm	2.1 / 6.2 / 8.4	150	UHF	4	8.3	110	B	\$169.95
X-30A	2 m / 70 cm	3.0 / 5.5	150	UHF	2	4.5	135		\$69.95
X-50A	2 m / 70 cm	4.5 / 7.2	200	UHF	3	5.6	135	C	\$99.95
X-50NA	2 m / 70 cm	4.5 / 7.2	200	N	3	5.6	135	C	\$114.95
X-200A	2 m / 70 cm	6.0 / 8.0	200	UHF	4	8.3	112	B	\$129.95
X-300A	2 m / 70 cm	6.5 / 9.0	200	UHF	4	10	112		\$139.95
X-300NA	2 m / 70 cm	6.5 / 9.0	200	N	4	10	112	B	\$159.95
X510HDM	2 m / 70 cm	8.3 / 11.7	330/250	UHF	5	17.2	90	A	\$209.95
X-510HDN	2 m / 70 cm	8.3 / 11.7	330/250	N	5	17.2	90	A	\$209.95
X-510NJ	144/430	8.3 / 11.7	200	N	5	17.2	90	A	\$219.95
X-3200A ²	2m/1-1/4m/70cm	6.0 / 7.8 / 8.0	100@	UHF	4	10	112	B	\$179.95
X-6000A	2m / 70 / 23cm	6.5 / 9.0 / 10.0	100	N	5	10	112	B	\$199.95
BB7V	2-30 MHz		250	UHF	6	5/22	80		\$399.95
CP6AR	75/40/15/10/6 m		200	UHF	9.9	15.1	80		\$399.95
CP-725H	40 / 15 / 10 / 6 m		500-200	UHF	6.6	11.7	100		\$399.95

Diamond Handheld and Receiving Antennas

Model	Description	HRO Price
D-130J	Wideband discone 25-1500 MHz. 20 W transmit 50MHz MHz. 100 W 144-3000 MHz No cable.	\$109.95
D-130NJ	Wideband discone 25-1500 MHz. 20 W transmit 50 MHz MHz. 100 W 144-1300 MHz. No cable, Type-N	\$109.95
D-3000N	Wideband discone RX 25-3000MHz, TX 50-1300MHz 20 W 50 MHz, 20 W transmit 50 MHz MHz. 100 W 144-1300 MHz, 67" tall, Type N	\$129.95
RH-3	2m / 70cm dual-band HT antenna. 1.75" BNC. 120-900 MHz receive.	\$29.95
RH-77CA	High gain 2m / 70cm dual-band HT antenna. Receive range to 900 MHz. BNC.	\$24.95
RHF-10	144/440. Air Band 6W. Rec Only 150/300/450/800/900MHz, BNC	\$21.95
RHF-40	Super flexible version of Model RH-77CA	\$29.95
SRHF-40	Super flexible 15" tall SMA 2m / 440 HT antenna	\$29.95
RH-205	2m HT antenna, telescopic, 5/8 fully extended, 47.5"; 1/4 retracted, 9".	\$29.95
RH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" BNC, 10 watts.	\$29.95
RH-707	2m / 70cm dual-band, tiltable whip HT antenna. 8-1/4" BNC.	\$33.95
RH-951S	High gain 2m / 70 cm / 23 cm slim tri-band HT antenna. Flexible. BNC (Wide band receive)	\$44.95
SRHF10	Ht Antenna, 144/440MHz. Air Band 6W, SMA, Rec Only 150/300/450/800/900MHz	\$26.95
SRH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" SMA, 10 watts.	\$27.95
SRH-77CA	High gain 2m/70cm dual-band flexible HT antenna, SMA	\$29.95
SRJ-77CA	Same as SRH-77CA for Wouxun, SMA	\$29.95
SRH-320A	2m/1-1/4m/70cm tri-band HT antenna. Flexible. SMA. 10 watts	\$49.95
SRH-789	Telescoping handheld antenna 95-1100 MHz, 6 sections, folds at base	\$34.95
RH-789	Same as SRH-789 but BNC connector	\$34.95
SRH-805	2m / 70cm / 23cm tri-band HT antenna. 1.75" SMA, 10 watts.	\$27.95
SRH-815	2m / 70cm / 23cm tri-band HT antenna. Flexible. 6" SMA, 6 watts	\$28.95
SRH-940	6m / 2m / 440 MHz SMA HT antenna	\$36.95
SRH-999	6m / 2m / 70cm / 23cm quad-band HT antenna. Flexible. 21 1/4" SMA, 10 watts.	\$59.95

Specialty Antennas

High Power 2m / 70cm Mobile

Dual-band mobile antenna. 300 watts (2m) and 250 watts (70cm). Use K400 and K600 series mounts. **NR7900A HRO Price \$84.95**

Quad Band FM

10m / 6m / 2m / 70cm quad FM band antenna for FT8900A radio or multi radio applications. Use K400 and K600 series mounts. **CR8900A HRO Price \$99.95**

2m / 70cm Mobile

Ideal antenna for increased performance of HT radio or where a compact antenna is required. Magnetic mount base. 1/4 wave (2m) and 1/2 wave (70cm), black finish. Available in UHF or SMA cable configuration.

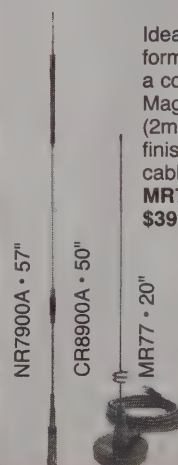
MR77 / MR77SMA HRO Price \$39.95

2m / 70cm Mobile

NR-770HRKS HRO Price \$109.95

2m / 70cm Mobile

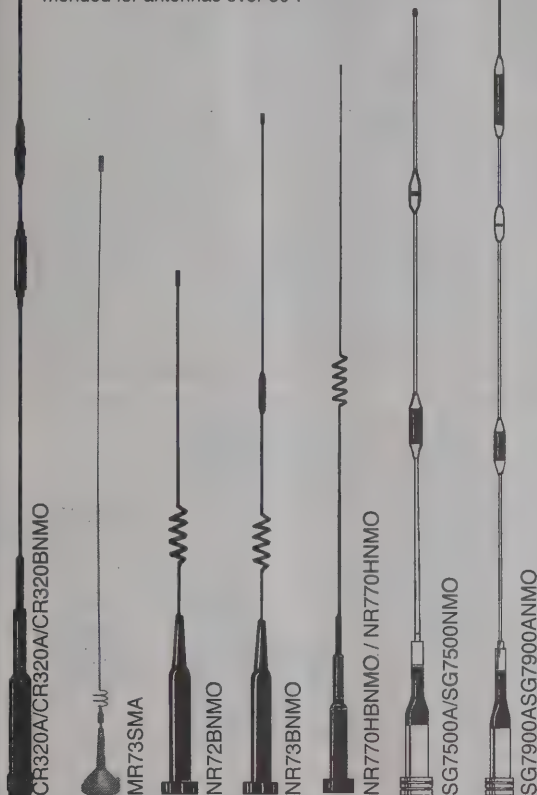
CR270A HRO Price \$42.95



ANTENNAS & DUPLEXERS

Diamond Mobile Antennas

Factory adjusted for American amateur bands, no tuning required unless specified. Mobile antennas have fold-over feature with spring loaded hinge (except NR72BNMO, NR73BNMO, M285, M685, MG200, MR77 and MR77SMA). Magnetic mount not recommended for antennas over 50".



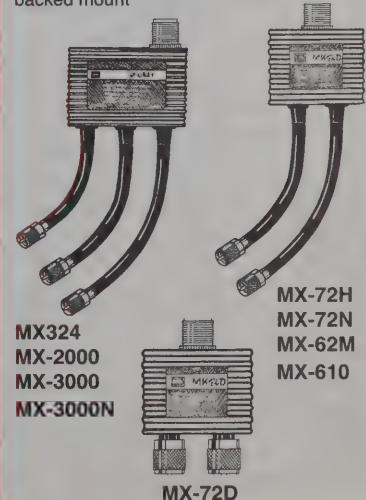
Model	Bands	Gain/dB	Watts	Mount	Lth/in	HRO Price
AZ505SP	2m/70cm	2.15 dBi	50	UHF	15.5	\$39.95
AZ505FXH	2m/70cm	2.15 dBi	50	UHF	15.5	\$39.95
AZ505RSP	2m/70cm	2.15(2m) 4.9(70cm)	50	UHF	27.5	\$46.95
CR-270A	2 m/70 cm	2.15 dBi	50	UHF	17.3	\$42.95
CR-320A ^{4,5}	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100@	UHF	36	\$83.95
CR320BNMO ^{4,5,6}	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100@	NMO	36	\$83.95
CR-627B ^{4,5}	6m/2m/70cm	2.1/4.5/7.2	150	UHF	60	\$99.95
CR-627BNMO ^{4,5}	6m/2m/70cm	2.1/4.5/7.2	150	NMO	60	\$99.95
CR8900A ^{4,7(FM Only)}	10m/6m/2m/70cm	2.15(2m) 5.5(70cm)	60	UHF	50	\$109.95
D220 disccone	100-1600 MHz	2	50	PL-259	35.5	\$109.95
MG200 ⁷	2.4 GHz	7	-	N	23.6	\$99.95
HF6FX ^{4,7}	6 m	2.15	250	UHF	44	\$69.95
HF50CX ^{4,7}	6 m	3.5	200	UHF	71	\$99.95
M285 ^{4,8}	2 m	3.4	200	UHF	52.4	\$31.95
M285SNMO ^{4,8}	2 m	3.4	200	NMO	52.4	\$31.95
MR73S Mag Mt	2m/70cm	2.15/3.4	10	SMA	20	\$26.95
MR73SMA	2m/70cm	2.15/3.4	10	SMA	19.5	\$29.25
MR75S Mag Mt	2 m/70 cm	2.15/3.4	35	SMA	20	\$36.95
MR77 ^{4,7}	2 m/70 cm	2.15/3.4	70	†	20	\$39.95
MR77SMA ^{4,7}	2m/70cm	2.15/3.4	70	&	20	\$44.95
M685S ^{4,7}	6 m	2.15	200	UHF	52.4	\$31.95
M685SNMO ^{4,7}	6 m	2.15 dBi	200	NMO	52.4	\$31.95
NR124	23 cm	8.4	100	Type N	25	\$54.95
NR124NMO	23 cm	8.4	100	NMO	25	\$64.95
NR140BNMO	220 MHz	4	159	NMO		\$53.95
NR22L ⁴	2 m	6.5	100	UHF	96.8	\$69.95
NR2000NA	2 m/70 cm/23 cm	3.15/6.3/9.7	100	N	39	\$89.95
NR-72BNMO ^{4,7}	2 m/70 cm	2.1/2.1	100	NMO	14	\$44.95
NR-73BNMO ⁴	2 m/70 cm	2.1/5.3	100	NMO	33	\$57.95
NR-770HA	2 m/70 cm	3.0/5.5	200	UHF	40	\$56.95
NR-770HNMO	2 m/70 cm	3.0/5.5	200	NMO	41	\$59.95
NR-770HB ⁴	2 m/70 cm	3.0/5.5	200	UHF	40	\$59.95
NR-770HBNMO ⁴	2 m/70 cm	3.0/5.5	200	NMO	41	\$64.95
NR-770HRKS ⁴	2 m/70 cm	3.0/5.5	200	UHF	40.2	\$109.95
NR-7900 ⁴	2 m/70 cm	3.7/6.4	300/250	UHF	57	\$84.95
SD330 screwdriver	3-30 MHz		200	UHF	73	\$389.95
SG7000A ^{4,7}	2 m/70 cm	2.1/3.8	100	UHF	18	\$69.95
SG7500A	2 m/70 cm	3.5/6.0	150	UHF	41	\$77.95
SG7500NMO	2 m/70 cm	3.5/6.0	150	NMO	42	\$72.95
SG7900A ⁴	2 m/70 cm	5.0/7.6	150	UHF	60	\$119.95
SG7900A/NMO ⁴	2 m/70 cm	5.0/7.6	150	NMO	62	\$124.95

Diamond Duplexers and Triplexers

Model	Port	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol. dB	MIX Conn.	Port Conn.	HRO Price
MX-37	LPF HPF	1.6 - 470 900 - 1300		100 50	.25 .45	45 45	N-Jack(F)		\$59.95
MX62M	LPF HPF	1.6 - 56 76 - 470		200 200	.2 .2	50 50	SO-239	PL-259/12" cable PL-259/12" cable	\$74.95
MX-72D		Similar to MX-72H, but Direct Connection							\$48.95
MX-72H	LPF HPF	1.6-30 140-150 400-460	400 150 100	400 150 100	.1 .1 .2	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable	\$54.95
MX-72N		Similar to MX-72H, but type-N on UHF port							\$54.95
MX-72A		Similar to MX-72N, but type-N, PL-259/12" 5D cable							\$54.95
MX-214	LPF HPF	140-150 220 - 225	300 200	300 200	.3 .4	40 40	SO-239	PL-259/12" cable PL-259/12" cable	\$65.95
MX-324	LPF BPF HPF	1.6-60 220-225 400-550	800 600 500	800 600 500	.3 .4 .4	40 40 40	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	\$89.95
MX-610	LPF HPF	1.3 - 30 49 - 470	600 500	600 500	.2 .25	45 45	SO-239	PL-259/12" cable PL-259/12" cable	\$69.95
MX-2000	LPF BPF HPF	1.6-60 110-170 300-950	800 800 500	800 800 500	.15 .20 .25	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	\$89.95
MX-3000	LPF BPF HPF	1.6-160 350-500 850-1300	800 400 200	800 400 200	.15 .25 .30	55 55 55	N-Jack(F)	PL-259/12" cable PL-259/12" cable N-male/12" cable	\$79.95
MX-3000N		Similar to MX3000, but with Type-N male on BPF connection							\$85.95

Black anodized finish †Mag Mt with 13' RG58 Cable w/UHF & Mag Mt w/13' RG58 cable w/SMA

4. Magnetic mounts not recommended. Vehicle ground required. 5. 52-54 MHz only. 6. 100 watts on 1-1/4m; 200 watts on 2m and 70cm. 7. Gain Rated in dBi 8. Tunable from 144-174 MHz. 9. Blackwith adhesive-backed mount



Special Trunk Mount

for 3/8 x 24 thread antennas

K400-3/8C

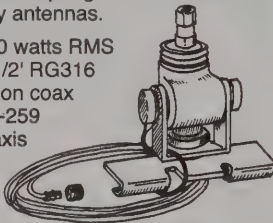
HRO Price \$73.95

Here's the ideal mounting system for Out-backer Perth, OB Jr., and other medium weight antennas. A spring is recommended for stiff or heavy antennas.

Power: 350 watts RMS
Cable: 6 1/2' RG316
teflon coax

Connector: PL-259
Adjustment: 2 axis

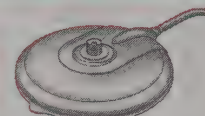
Note: Use C110, 10 foot extension for front radio installation. \$19.95



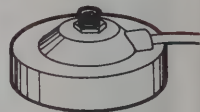
Model	Diamond Accessories	HRO Price
CA23RS	Lightning surge protector, DC-2500 MHz, 200 w, type-N female conector	\$39.95
CA23RW	Lightning surge protector, DC-2500 MHz, 200 w, type-N female, waterproof	\$44.95
CA35RS	Lightning surge protector, DC-1000 MHz, 400 w, SO-239	\$29.95
SP-1000	Lightning Protector DC-1000 MHz, Max Power 400w PEP, SO-239, VSWR <1.2	\$29.95
SP-1000PW	Lightning Protector DC-1000 MHz, Max Power 400w PEP, SO-239(F), SO-239(M)VSWR <1.2	\$34.95
SP-3000	Lightning Protector DC-3000 MHz, Max Power 200w PEP, Type-N, VSWR <1.2	\$39.95
SP-3000P	Lightning Protector DC-3000 MHz, Max Power 400w PEP, Type-N(F), Type-N(M), VSWR <1.2 Waterproof	\$41.95
SP-3000W	Lightning Protector DC-3000 MHz, Max Power 200w PEP, Type-N, VSWR <1.2 Waterproof	\$44.95
MGC50	Window feedthru assembly, HF-50MHz 50W, 2m 40W, 440MHz 30W, 1200Hz 10W, SO-239	\$53.95
CX-210A	Heavy duty wideband coax switch, DC-1000 MHz. 1.5 kW, UHF(F) to UHF(M) Waterproof	\$49.95
CX-210N	Heavy duty wideband coax switch, DC-1500 MHz. 1.5 kW, N connector.	\$79.95
CX-310A	Heavy duty 3 position coax switch, wideband. DC-800MHz. SO-239 connectors.	\$89.95
DL-30A	Dummy load. DC-500 MHz, 15W RMS (max)/100w peak. PL-259 connector.	\$49.95
DL-30N	Dummy load. DC-500 MHz, 15W RMS (max)/100w peak. Type N connector.	\$49.95
NMO/UHF-B	NMO to UHF adapter converting antennas with PL259 to NMO-Black	\$13.95

Mobile Mounts

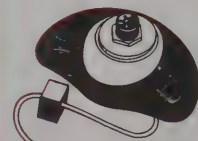
Model	Description	HRO Price
C101	UHF base 6.5' RG316 Teflon coax w/PL259	\$37.95
C101NMO	NMO base 6.5' RG316 Teflon coax w/PL259	\$37.95
C101-3/8C	Replacement cable only for K400-3/8C	\$34.95
C101-3/8C Kit	Replacement cable and hardware for K400-3/8C	\$44.95
C104SMA	4' RG58/U Extension cable for PL-259. 90 degree SMA Male & SO-239	\$16.95
C105SMA	5' RG58/U Extension cable for C101/C101NMO. 90 degree SMA Male	\$16.95
C110BNC	10' RG316 extension cable for C101/C101NMO. Use front radio installations. BNC male	\$29.95
C110SMA	10' RG316 extension cable for C101/C101NMO. Use front radio installations. SMA male	\$29.95
C110	10' mini-8/RG8X extension cable for C101/C101NMO. Use front radio installations.	\$19.95
C211	Combination of C101 and C110. 16.5 feet cable assembly	\$49.95
C213	UHF base, 13.5' RG316 Teflon Coax with PL-259	\$44.95
C213NMO	NMO base, 13.5' RG316 Teflon Coax with PL-259	\$44.95
CRM	Stainless steel right angle mount with U-bolt	\$16.95
DPK-4NM-N	Type N Magnet. 13' 5mm coax w/Type-N plug. Good to 1300 MHz.	\$54.95
HRKS	Adhesive backed UHF mount, 13.5' RG316 teflon coax with SMA and PL-259 adapter	\$69.95
K400-3/8C °	Special mount for 3/8x24 thread Antenna. 6.5 feet RG316 w/PL-259	\$73.95
K400C °	Deluxe mount with UHF type base. 6.5 feet RG-316 Teflon coax w/PL-259	\$73.95
K400CNMO °	Deluxe mount with NMO type base. 6.5 feet RG316 Teflon coax w/PL-259	\$73.95
K400S	Deluxe mount with UHF type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$79.95
K400SNMO	Deluxe mount with NMO type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$79.95
K412C	Trunk/hatchback mount. UHF base, 6.5' Teflon coax w/PL-259. 45" max ant	\$64.95
K412CNMO	Trunk/hatchback mount. NMO base, 6.5' Teflon coax w/PL-259. 45" max ant	\$64.95
K412S	Trunk / hatchback mt. UHF base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	\$69.95
K412SNMO	Trunk / hatchback mt. NMO base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	\$69.95
K515S	Deluxe luggage carrier mt. UHF base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$69.95
K515SNMO	Deluxe luggage carrier mt. NMO base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$69.95
K540KM	Deluxe Mirror/Luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	\$59.95
K550KM	Deluxe mini van luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	\$69.95
K600M	Tilt angle (0-9 degrees) trunk mount. Black. RG-188 and low loss 7 mm cable.	\$59.95
K600S	Tilt angle (0-9 degrees) trunk mt UHF base. 13.5 feet RG316 w/SMA (PL259 adapter inc	\$62.95
K702M	Deluxe low-profile magnet/suction mount. 6.5" diameter, 13' RG58 & PL-259	\$49.95
K9000LRM	Motorized mount for luggage rack. Use C-series cable assemblies	\$104.95
K9000LRMO	Same with oversize K515 hardware	\$109.95
K9000TM	Motorized mount for trunk lid. Use C-series cable assemblies	\$104.95
NMO/UHF-B	NMO to UHF adapter. Black Chrome. Low VSWR to 500 MHz	\$13.95
SPM35	UHF type base on heavy 1.5 lb/4" magnetic, 13' 5mm coax / PL-259.	\$44.95
SPMNMO	NMO type base on heavy 1.5 lb/4" magnet, 13' 5mm coax with PL-259	\$49.95



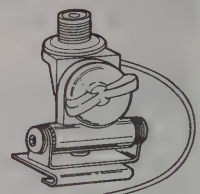
K702M



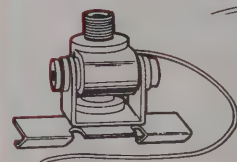
SPM35
SPMNMO
DPK4NM-N



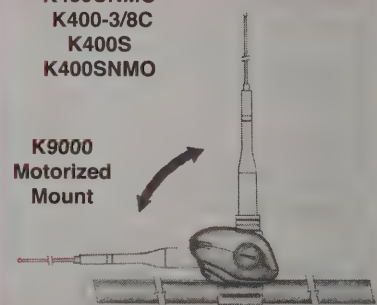
K600M
K600S



K412CNMO
K412SNMO
K412C
K412S



K400C
K400CNMO
K400-3/8C
K400S
K400SNMO



K9000
Motorized
Mount

9. Use C110 for front radio installations

SPECIALTY ANTENNAS / ANALYZER

DIAMOND ANTENNA

HV7A Mobile Antenna System

For New HF / VHF Tranceivers

(such as: IC706, IC7000,

FT100, FT857, FT897 and the FT8900R)

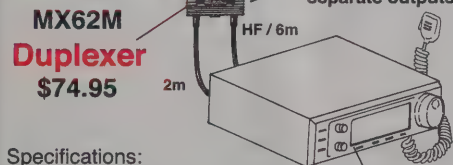
The HV7A has 5 band capability: 70cm, 2m, 6m and 2 HF bands through use of loading coils. Fold-over feature allows for easy access into low overhead buildings.

Bands Supplied: 10m / 6m / 2m / 70cm
Opt. Loading Coil: 40m / 20m / 17m / 15m
Power, P.E.P.: HF 120w / VHF 200w
Mount Connector: UHF
Length: 54" (HV7A)
SWR: 1.5:1 nominal

HV7A Price: \$109.95

Shown with optional
mount, car and radio

Optimal use when
VHF/UHF have
separate outputs



- Specifications:
- HF / 6m, 2m 70cm duplexer.
 - 1.6-56 MHz LPF
 - 76-470 MHz HPF
 - (76-120 receive only)
 - Watts: 600 P.E.P.
 - Loss: .2 dB LPF
.3 dB HPF
 - Isolation: 50 dB

Optional Loading Coils

HVC14	20m	\$37.95
HVC18	17m	\$37.95
HVC21	15m	\$37.95

Antennas for Handhelds

RH3 / SRH805 SMA

RH77CA/SRH77CA

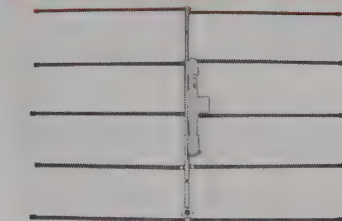
RH951S

RH707

SRH320A

SRH519 / SRH815 SMA

Log Periodic



ELK
2m / 440
Dual Band

The Elk 2m / 440 is a dual band log periodic antenna for 144-148 MHz and 430-450 MHz. The antenna features 6.6 dBd gain on 2 meters and 7 dBd on 440 MHz. The SWR is 1:1 in these frequency ranges. The antenna handles 200 watts on 2 meters and 100 watts on 440 MHz. The boom length is 24 inches and the antenna weighs only 1.4 pounds.

The ELK 2m / 440 assembles quickly with color coded threaded elements that screw into the color coded boom. Access two bands with just one coax fitting. No duplexer is required. All of the band may be used without retuning. Easily change the polarity of the antenna by twisting the mounting assembly. HRO Price \$CALL

Wireless Antennas



Wi-Fi / 802.11b

Wireless
LAN Antennas

NGC offers a wide selection of directional and omnidirectional antennas for Amateur Television, the ISM band, LAN / WAN, data links and wireless internet.

GP-24

ATV/ISM Band 2400-2500 MHz
Omnidirectional Gain: 15.4 dBi
Height: 5' 10"
Connector: N-Type
HRO Price: \$199.95

GP-24-3

Same as GP-24 but omnidirectional with 3 degree electrical downtilt.
HRO Price: \$CALL

2m / 220 MHz / 440 MHz



Super-M

HRO Price: \$79.95

Niljon Antennas

VHF / UHF Mobile
with Wide Receive

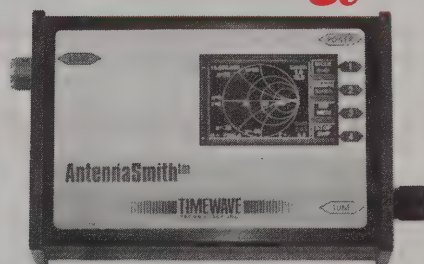
The typical 1/4 wave antenna used on commercial (taxis, trucking companies, etc.) and government vehicles (ambulances, other city vehicles, school buses, state patrol, etc.) can easily be replaced by the Super-M with tremendous, even life-saving, results. One antenna receives 25 to 1300 MHz and transceives on 140-170 MHz, 200-225 MHz and 400-480 MHz. It handles 200 watts with a direct feed and is only 19" high.

SUPER-M V/U screws directly onto a 5/16" - 24 thread stud mount [also called the "LM" Larsen Mount].

SUPER-M V/U-NMO comes packaged with an adapter to screw onto a Motorola NMO style mount.

Impedance Analyzer

Timewave
Technology



TZ-900

AntennaSmith™ Analyzer

Analyze an antenna system in real time with customized graphs for individual installations. Uses a full color TFT LCD graphic display. Show SWR plot or Smith chart. With the push of a button the data can be stored for later on-screen comparison, download, analysis, and print-out. Upload your saved files to compare new and old antennas on the display in real time. (Uses the included Timewave AS-1 software on the PC. Requires Windows 98 or XP.)

Quickly tune the cursor to check your antenna system at the desired frequency while looking at the big picture on the graph. The direct digital synthesizer makes a great RF signal generator. Easily calibrate to WWV with 1 Hz frequency resolution. HRO Price \$999.95



CRANK-UP TUBULAR

MA-SERIES CRANK-UP MASTS

The premier MA-Series crank-up Tubular Towers are designed to be both safe and neighbor friendly. The slender design gives a clean, flagpole-like appearance, while allowing for antennas up to 10 sq. feet in 50 mph winds. Per EIA Specifications, adequate safety margins are included. Uniform Building Code calculations are available for most models.

The MA-40 and 550 models come standard with flat base, two 1/2" x 10" anchor bolts, wall bracket and rotor plate mounted on top of top section. No guying is required when tower is properly bracketed to the eve of your roof.

MA-Series towers are completely self-supporting only when used with accessory MARB or MAB Series bases. The MARB Series rotor base allows the entire tower and antenna to be rotated from the base (rotor not included). This provides for easy rotor maintenance plus emergency hand rotation of the entire tower and antenna.

The MA-550MDP, 770MDP and 850MDP models include a heavy duty motor drive with positive pull down. The MDP models provide motorized raising and lowering of the tower. A remote control unit (RMC-1000) accessory is available that allows raising and lowering from your ham shack or other remote location.

All models without motor drives come standard with manual hand winches which have load actuated brakes for maximum safety. This feature prevents the winch from free-wheeling and causing injury to you or your installation in the event that you lose your grip during raising or lowering.

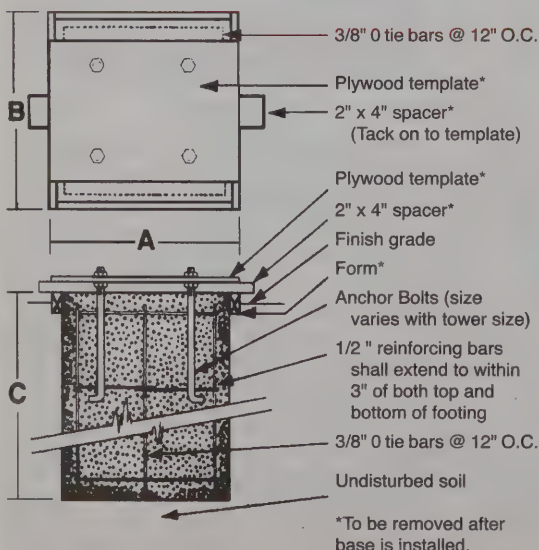
All steel used at US Tower conforms to ASTM specifications. All welding is done by certified factory personnel. All of our towers are factory tested by trained personnel before leaving the plant.

Model Number	Height Maximum	Height Minimum	Sections	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
MA-40	40'	21'6"	2	242	3" sq.	4.5"	CALL
MA-550	55'	22'1"	3	435	3" sq.	6.625"	CALL
MA-550MDP*	55'	22'1"	3	620	3" sq.	6.625"	CALL
MA-770	75'	22'10"	4	645	3" sq.	8.0"	CALL
MA-770MDP*	75'	22'10"	4	830	3" sq.	8.0"	CALL
MA-850MDP*	90'	23'6"	5	1128	3" sq.	10.0"	CALL

All Towers will handle 10 sq. ft antenna at 50 MPH winds.

* These towers also requires purchase of MCL-100 or RMC-1000

MA-SERIES BASE INFORMATION



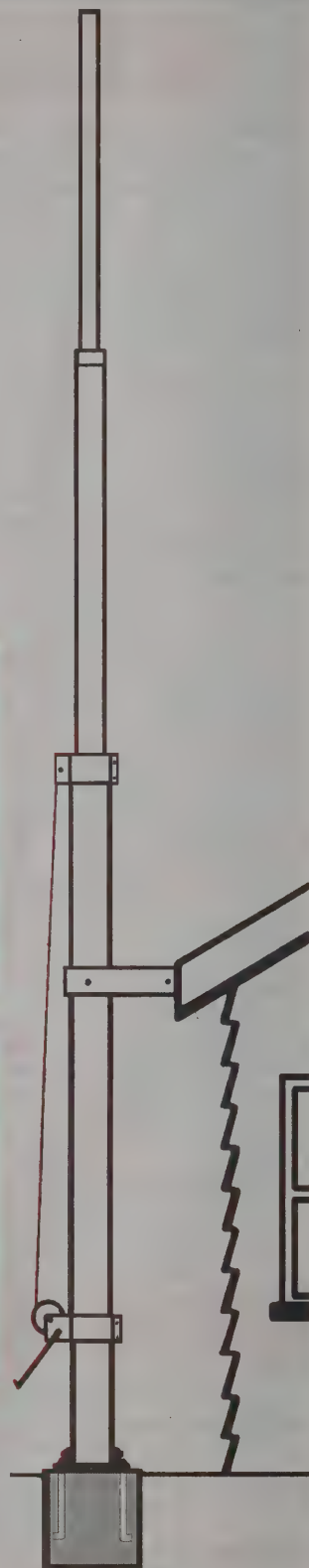
Model	A	B	C	HRO Price
MA-40 standard flat base	16"	16"	16"	CALL
MA-550 standard flat base	20"	20"	20"	CALL
MARB-40 Rotator Base	3'	3'	4'	CALL
MARB-550 Rotator Base	3'	3'	5'6"	CALL
MARB-770 Rotator Base	3'	3'	6'6"	CALL
MARB-850 Rotator Base	4'	4'	6'6"	CALL

Base dimensions may vary with different soil compositions.
Allow ample time for concrete to cure.
MAB and MARB dimensions are the same.

Tower base hole size and rebar are for illustration only, current UBC engineering calculations should be used to determine your specific installation.

Rebar is not provided by US Tower. MA-40 & 550 use their standard base as a template. These standard bases use only 2 bolts and require no rebar. Wooden template included with MAB & MARB bases.

Because of wide variations throughout the country in zoning requirements and loading conditions (snow, wind, ice, etc.), it is the responsibility of the customer to make certain that his Tower conforms to all applicable codes. We recommend you obtain all necessary permits prior to purchase.



The factory reserves the right to make changes or modifications without notice.

MA-SERIES ACCESSORIES

Model	Description	Weight
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MAF Raising Fixture

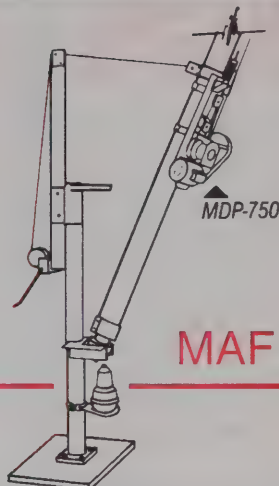
MAF-Series Raising Fixture accessory for easy raising and antenna servicing. For use with MARB and MAB bases.

MAF-40	Raising fixture for MA-40	35#
MAF-550	Raising fixture for MA-550	70#
MAF-770	Raising fixture for MA-770	75#
MAF-850	Raising fixture for MA-850	80#

The Customer is Responsible

for obtaining all local city or county building and tower permits
AND

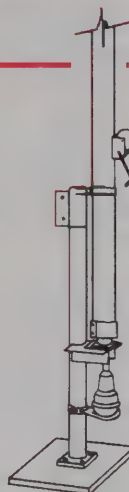
for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.



MAF

MARB Freestanding Rotator Base

MARB-40	Freestanding rotator base for MA-40 with four 3/4" x 27" anchor bolts and thrust bearing	75#
MARB-550	Freestanding rotator base for MA-550 with four 1" x 36" anchor bolts and thrust bearing	140#
MARB-770	Freestanding rotator base for MA-770 with four 1" x 36" anchor bolts and thrust bearing	195#
MARB-850	Freestanding rotator base for MA-850 with four 1-1/8" x 36" anchor bolts and thrust bearing	280#



MARB

MAB Freestanding Type Base

MAB-40	Freestanding hinged base for MA-40 with four 3/4" x 27" anchor bolts	55#
MAB-550	Freestanding hinged base for MA-550 with four 1" x 36" anchor bolts	119#
MAB-770	Freestanding hinged base for MA-770 with four 1" x 36" anchor bolts	175#
MAB-850	Freestanding hinged base for MA-850 with four 1-1/8" x 36" anchor bolts	180#



Hinging allows for easy installation on both MAB and MARB bases.

MAB

Coax Standoff Arms

CX-2M	Coax standoff arms for MA-40	4#
CX-3M	Coax standoff arms for MA-550	6#
CX-4M	Coax standoff arms for MA-770	8#
CX-5M	Coax standoff arms for MA-850	10#

IV-16	The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with the MARB rotator base.	5#
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Model	Description	Weight
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Motor Drives

MD-75	Heavy-duty motor drive with one HP motor and gear box.	155#
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Remote Control Accessories

RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location.	18#
MCL-100	Limit switch control package includes limit switches, limit switch brackets, and control box at the base of the tower.	7#

**Call Toll-Free for Discounts on
U.S. Towers and Accessories**



TMM SERIES

US Tower's latest design includes the compact TMM Series towers giving Hams in restricted areas an alternative.

The TMM Series has a minimum retracted height of 11'4" (may vary, depending on rotator used) and a maximum height of 47' including mast. At the towers' retracted height, visual impact is reduced to a minimum and antenna servicing is made easier. Typically the tower and antenna are below the roof line of your home when the tower is fully retracted.

The TMM Series towers are lightweight, freestanding crank-up towers that allow up to 18 square feet of antenna in 50 mph winds per EIA specifications. The TMM-433HD handles 24 square feet. These lightweight towers should provide many years of trouble free service. All of our towers have

TX SERIES

US Tower's freestanding TX Series crank-up towers are as strong or stronger than most competitors' heavy-duty models. The TX Series towers have 21 foot sections with 4 foot overlap to provide extra height and strength. In addition, the overlap helps prevent binding while lowering your tower in high wind conditions.

The TX Series towers have a large enough top section (12 1/2") to permit installation of most rotators inside the section for maximum strength while allowing the section to fully retract. Cross bracing at critical points on the tower ensures safety and additional strength. All US Towers crank-up towers have a heavy-duty, hot dipped galvanized finish both inside and out, which should provide many years of trouble free service.

The TX Series towers come complete with rotator plate and base hardware which includes large steel anchor bolts and heavy-duty steel T-base that

HDX SERIES

US Tower's HDX Series heavy-duty crank-up towers have up to 2 1/2 times more windloading capacity than others commonly advertised. This superior strength allows for large stacked arrays, while using our commercial type bases and anchor bolts that can be easily installed and vertically adjusted. All HDX Series T-bases are designed to use our TRX Series raising fixtures to make installations and antenna servicing a one man job.

Modified top sections for the HDR-300 rotators are available at a small additional cost. US Tower carries as accessories many different sizes and strengths of masts which can be used with the HDX Series towers. The HDX-572MDPL and 589MDPL motorized towers provide dual level wind, positive pull down and heavy duty gear box features. The HDX-572MDPL comes only with limit switch brackets. The HDX-589MDPL

a hot dipped galvanized finish inside and out.

The TMM-433SS and 541SS must have the rotator top mounted. The TMM-433HD will accept the Ham IV inside the tower. Oversized rotators will prevent full retraction of your tower; however, they may be used if full retraction is not required. This restriction is dependent on location of rotator plate. All TMM Series towers include anchor bolts, rotor plate, hinged T-base, load actuated winch, and eight feet of 2" OD x 120" antenna mast.

The TMM-433SS will accept the MD-75 motor drive accessory. The TMM-433HD and 541SS will accept the MD-75 and MDP-750 accessory motor drives. The MDP-750 motor drive accessory is compatible with both of our MCL-100 and RMC-1000 limit switch packages (see accessories).

allows the tower to hinge on for easy installation. All T-bases will accept the TRX Series raising fixtures for easy one man installation. All TX Series towers include Fulton hand winches (except MDP and MDPL models) which feature automatic load actuated brakes for maximum safety. Masts and motor drives are available as accessories (see accessory page).

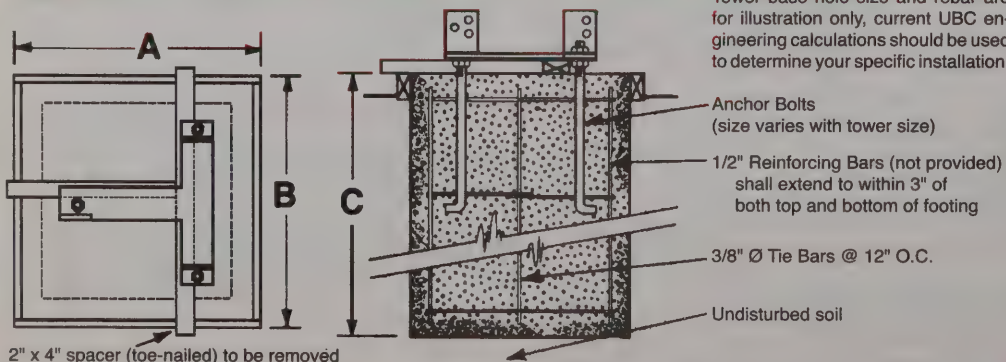
The TX-472MDP comes complete with MDP-750 motor drive and limit switch brackets. The TX-489MDPL includes the MDPL-1000 motor drive and limit switch brackets. Limit switch assemblies and remote raising devices are available (MCL-100) (RMC-1000) for all MDP-750 and MDPL-1000 motor drive units (see accessory page for description).

US Tower's TX Series requires no guying. The wind loading is calculated at 18 square feet of antenna in 50 mph winds per EIA specifications. To assist you in applying for necessary construction permits, Uniform Building Code calculations are available for most models.

comes complete with the MCL-100, limit switch package. All towers using MDP-750 and MDPL-1000 motor drives may use the RMC-1000 accessory limit switch package which allows the raising and lowering of your tower from the comfort of your ham shack or any remote location. MCL-100 is also available (see accessory page).

All HDX Series towers come complete with rotator plate, anchor bolts and heavy-duty T-base (doubles as template). US Tower's special T-base design allows the tower to hinge for easy installation. US Tower's crank towers do not require guy wires. The HDX Series towers are rated at 30 square feet of antenna at 50 mph winds per EIA specifications. To assist you in getting a construction permit, Uniform Building Code calculations are available for most towers.

CRANK-UP TOWER BASE INFORMATION



Model	A	B	C
TMM-433SS	4'	4'	6'
TMM-541SS	4'	4'	6'6"
TMM-433HD	4'	4'	7'
TX-438	3'6"	3'6"	6'
TX-455	4'6"	4'6"	6'6"
TX-472	5'	5'	7'3"
TX-489	5'6"	5'6"	7'6"
HDX-538	4'	4'	7'
HDX-555	5'	5'	7'3"
HDX-572	5'6"	5'6"	7'6"
HDX-589	5'6"	5'6"	9'
HDX-5106	5'	5'	9'
MA40	3'	3'	4'6"
MA550	3'6"	3'6"	5'
MA770	5'	5'	5'6"
MA850	5'	5'	6'

SELF-SUPPORTING CRANK-UP TOWERS

Tower Specifications

COMPACT TMM-SERIES CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TMM-433SS	33' w/o Mast	11'4"	4	315	10"	18"	CALL
TMM-433HD	33' w/o Mast	11'4"	4	400	12.5"	20 7/8"	CALL
TMM-541SS	41' w/o Mast	12'	5	430	10"	20 7/8"	CALL

Towers handle 18 sq. ft. antenna at 50 MPH winds. TMM-433HD handles 24 sq. ft.

TX-SERIES FREE-STANDING CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TX-438	38'	21'6"	2	355	12.5"	15"	CALL
TX-455	55'	21'	3	670	12.5"	18"	CALL
TX-472	72'	22'8"	4	1040	12.5"	21 5/8"	CALL
TX-472MDP*	72'	22'8"	4	1210	12.5"	21 5/8"	CALL
TX-489MDPL	89'	23'4"	5	1800	12.5"	25 5/8"	CALL

All Towers will handle 18 sq. ft. antenna at 50 MPH winds.

* This tower requires purchase of MCL-100 or RMC-1000

HDX-SERIES HEAVY-DUTY CRANK-UP TOWERS

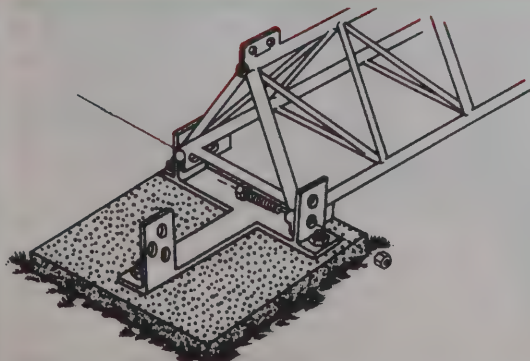
Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
HDX-538	38'	21'6"	2	600	15"	18"	CALL
HDX-555	55'	22'	3	870	15"	21 5/8"	CALL
HDX-572MDPL	72'	22'8"	4	1600	15"	25 5/8"	CALL
HDX-589MDPL	89'	23'8"	5	2440	15"	30 5/8"	CALL
HDX-689MDPL	89'	23'8"	5	3450	18"	37 1/8"	CALL
HDX-5106MDPL	106'	24'8"	6	3700	15"	37 1/8"	CALL

All Towers will handle 30 sq. ft. antenna at 50 MPH winds.

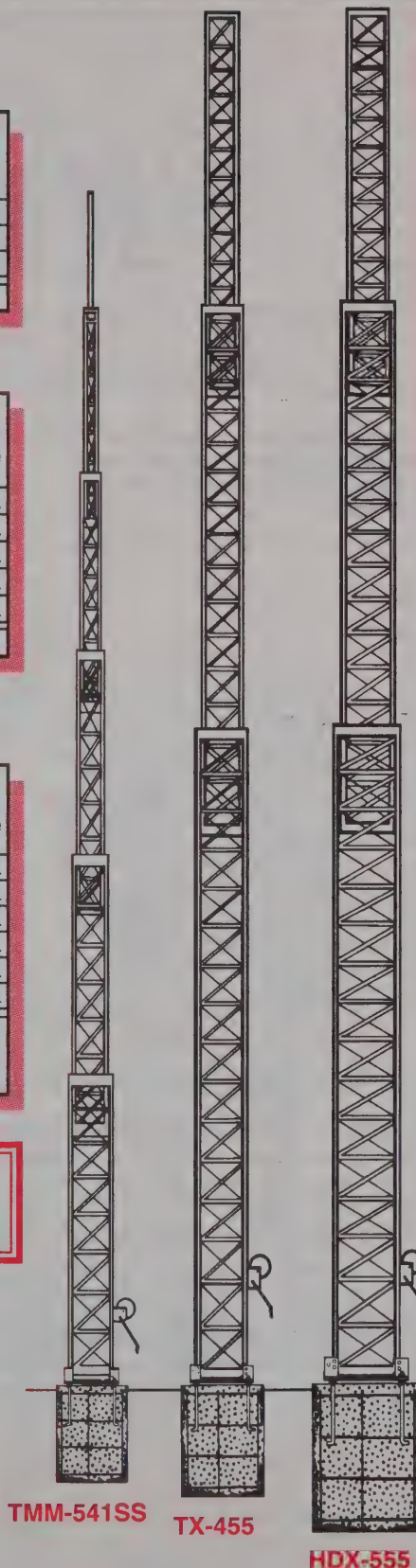
HDX-689MDPL rated at 60 sq. ft. of antenna at 50 mph winds.

HDX-5106MDPL rated at 35 sq. ft. of antenna at 50 mph winds.

**Call Toll-Free for Discounts on
U.S. Towers and Accessories**



**The Customer
Is
Responsible**
for obtaining
all local city or
county building
and tower
permits
AND
for taking the
tower off the
freight truck
when it is de-
livered. Please
arrange for
adequate help.



TMM-541SS

TX-455

HDX-555

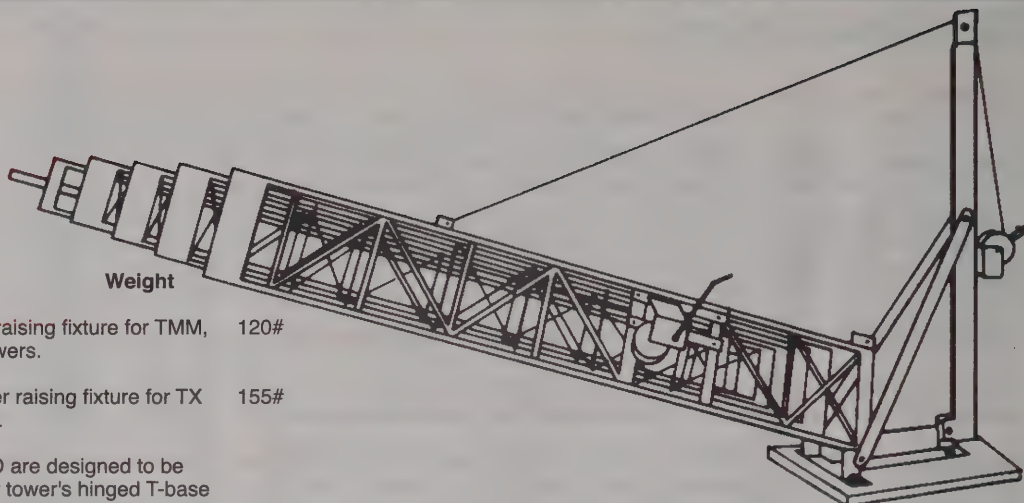
The factory reserves the right to make changes or modifications without notice.



Raising Fixture

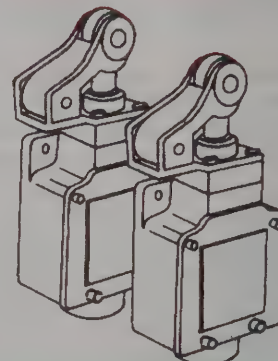
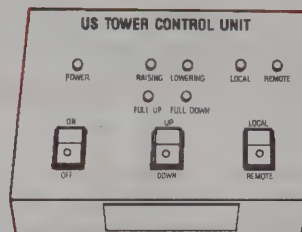
Model	Description	Weight
TRX-80	Standard model tower raising fixture for TMM, TX, and HDX series towers.	120#
TRX-80HD	Heavy-duty model tower raising fixture for TX and HDX series towers.	155#

Both TRX-80 and 80HD are designed to be easily mounted on your tower's hinged T-base for quick and safe one-man installation or antenna servicing.



Remote Control

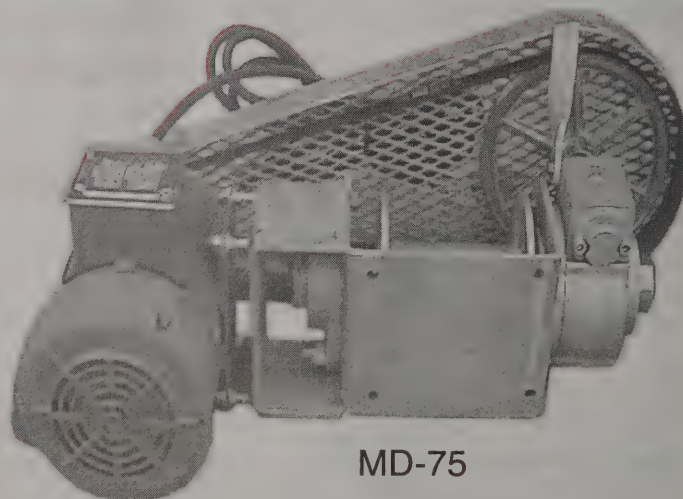
Model	Description	Weight
RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location. The RMC-1000 includes limit switches, limit switch brackets, and two relay boxes. The RMC-1000 can only be used with the MDP-750 and MDPL-1000 motor drives.	18#
MCL-100	Limit switch control package. The MCL-100 includes limit switches, limit switch brackets and control box at the base of the tower. The MCL-100 allows you to raise and lower your tower with automatic shut down when maximum or minimum height is reached. The MCL-100 can only be used with the MDP-750 and MDLP-1000 motor drives.	7#



Motor Drives

Model	Description	Weight
MD-75	Heavy-duty motor drive with 1 HP motor and 1 gear box.	55#

Call factory for replacement 1 HP motors, handwinches, limit switches, 3/16" x 7" x 19" and 1/4" x 7" x 19" aircraft cable, anchor bolts, belts, pulleys, sprockets, and modified bases. Tower dolly rentals are available. The factory reserves the right to make changes or modifications without notice.



MD-75

The Customer is Responsible

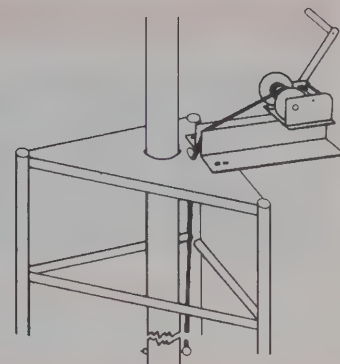
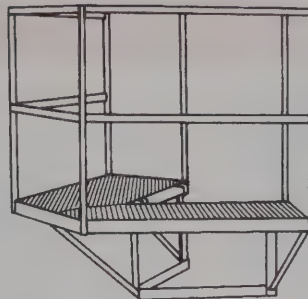
for obtaining all local city or county building and tower permits **AND** for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

CRANK-UP ACCESSORIES

Model **Description** **Weight**

Service Platform

HDP Large service platform with safety railings to provide a safe and comfortable surface while installing or maintaining your antenna and rotator. 125#

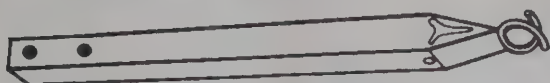


Mast Raising Fixture

MRF Mast raising fixture with winch and cable that attaches to the top of your tower to assist in raising and lowering your antenna mast. 20#

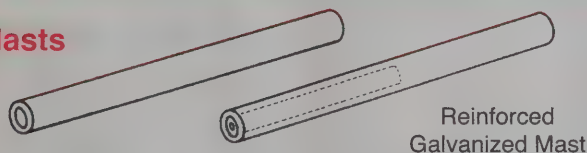
Coaxial Arm Sets

IV-16 The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with MARB rotator base. 5#



CX-2 Set of 2 coax standoff arms 6#
CX-3 Set of 3 coax standoff arms 8#
CX-4 Set of 4 coax standoff arms 10#
CX-5 Set of 5 coax standoff arms 13#

Masts



Reinforced Galvanized Mast

US Tower offers two different types of masts. The M-5, 10, 15 and 20 masts have .120" wall thickness. The M-15R and 20R have steel pipe inserts in the lower half of the mast which provides extra strength where most needed without adding unnecessary weight in the top portion. The M-15R and 20R have a wall thickness of .250".

Model **Description** **Weight**

M-5 2" O.D. x 5 foot galvanized mast 14#
M-10 2" O.D. x 10 foot galvanized mast 25#
M-15 2" O.D. x 15 foot galvanized mast 40#
M-15R 2" O.D. x 15 foot reinforced galvanized mast 50#
M-20 2" O.D. x 20 foot galvanized mast 55#
M-20R 2" O.D. x 20 foot reinforced galvanized mast 70#
CM-20 2" O.D. x 20 foot chromolly mast 140#

3/4" x 27" Anchor bolt with 2 nuts 5#
1" x 27" Anchor bolt with 2 nuts 10#
1-1/8" x 27" Anchor bolt with 2 nuts 12#
RP-3 Rotator plate for 10" section 5#
RP-4 Rotator plate for 12.5" section 7#
RP-5 Rotator plate for 15" section 9#

Thrust Bearing



TB-2US Thrust Bearing for 2" mast, 2 flange holes

10#

Tower Accessories

	TX438	TX455	TX472	TX472MDP	TX489	TX489MDPL	HDX-538	HDX-555	HDX-572	HDX-672MDPL	HDX-589MDPL	TMM-433SS	TMM-433HD	TMM-541SS	HRO Price
Masts															
M-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$67.95
M-8												S	S	S	-
M-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$119.95
M-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$174.95
M-20	0	0	0	0	0	0	0	0	0	0	0				\$229.95
M-15R	0	0	0	0	0	0	0	0	0	0	0				\$269.95
M-20R	0	0	0	0	0	0	0	0	0	0	0				\$329.95
CM-20	0	0	0	0	0	0	0	0	0	0	0				CALL
Raising Fixture															
TRX-80	0	0					0	0				0	0	0	\$699.95
TRX-80HD			0	0	0	0			0	0	0				\$999.95
Service Platform															
HDP			0	0	0	0			0	0	0				\$1,999.95
Coax Standoff Arms															
CX-2	0						0								\$90.95
CX-3		0						0							\$119.95
CX-4			0	0					0	0		0	0		\$196.95
CX-5					0	0					0			0	\$249.95
Motor Drives															
MD-75	0	0					0	0				0	0	0	\$1,699.95
MDP-750		0	0	S				0					0	0	\$2,599.95
MDPL-1000			0		0	S			0	S					\$3,699.95
Remote Control															
RMC-1000			0	0	0	0	0		0	0	0	0		0	\$1,669.95
MCL-100			0	0	R	0	S		0	0	S	S		0	\$699.95
Miscellaneous															
3/4" X 27 bolts	S														\$42.95
1" X 27" bolts		S			S	S	S		S	S					\$51.95
1-1/8" X 27" bolts			S	S				S			S				\$68.95
RP-3												S	S		\$61.95
RP-4	S	S	S	S	S	S							S		\$74.95
RP-5							S	S	S	S	S				\$113.95
MRF	0	0	0	0	0	0	0	0	0	0	0		0		\$449.95
TB-2US	0	0	0	0	0	0	0	0	0	0	0		0		\$169.95
IV-16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$67.95

WEATHER STATIONS

Weather Stations



Ultimeter 2100 HRO Price \$399.95

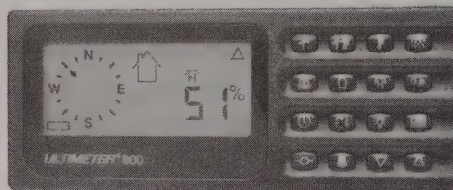
*Tracking more than 100
weather values*

The Ultimeter 2100 features a stunning platinum-tone housing with brilliant blue display backlighting. To enhance the user interface still further, an illuminated keypad provides exceptional visibility in darkness or low-light conditions. The unit utilizes Peet Bros. patented and proven weather sensor technology, including a unique all-digital wind sensor. Its microprocessor is 8 times faster and has 4 times the memory of their earlier weather stations. Major features include:

- Barometric pressure and numeric pressure change over a 3 hour period plus preset barometric Storm Alert, Wind Speed, Wind Direction, Outdoor Temperature, Indoor Temperature, Wind Chill, Time, Date and (with optional sensors) Indoor Humidity, Dew Point and Rainfall.
- Two versatile 4-mode serial ports can accept remote commands, making it easy to communicate with external devices to transmit data or collect it remotely by phone, modem, or radio link. The 5 minute packet mode is perfect for economical radio "beacon" transmission. The 2100 comes "APRS-Ready," requiring only direct cable connection to a TNC (cable not provided).
- The second serial data port is in the 2100's sensor junction box, delivering greater flexibility in the location and connection of the Weather Picture, PC Weather Data Logger or other peripheral weather accessory.
- An exclusive Triple-Bank Memory System stores highest and lowest readings – today's, yesterday's and long term – and the date and time that every high and low occurred.
- Each long term high and low can be reset individually or you can use a Master Reset to clear all long term memories simultaneously.
- The system includes built-in static electricity discharge protection for all outdoor sensors. Also includes a 3 prong grounded AC adapter.
- Features a unique Rain Rate Alarm serving as a flash flood alert. It is compatible with all of our optional rain gauge models.
- The 2100 has a full array of adjustable alarms and an optional electrical external alarm output. A predictive battery test circuit warns when the battery is getting weak.
- Optional sensors include humidity sensors and rain gauges.

WeatherText™ Special

WeatherText™ is an RS-232 serial data output mode in which the instrument puts out one human-readable text Weather Report each minute. Viewable on a PC monitor using terminal software such as HyperTerminal or may be transmitted as a data packet. For a limited time every 800/2100 Ultimeter Weather Station purchased will include the WeatherText™ Tools Data Logger key, including software and PC interface cable. \$69 retail value

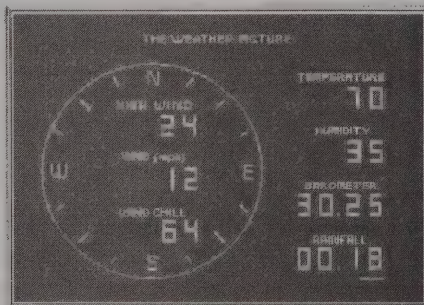


Ultimeter 800 HRO Price \$279.95

The Ultimeter 800 has nearly all the features of the Ultimeter 2000 except the barometer. It has wind speed, wind direction, outdoor temperature, indoor temperature, wind chill temperature, time, date, automatic leap year adjustment and automatic scan mode as standard functions. With optional sensors, rain, outdoor humidity, indoor humidity and dew point reading are available. It automatically stores today's and yesterday's highs, lows and total rain fall. It also stores long term highs and lows. Alarms are provided for high wind, high and low outdoor temperature, high and low indoor temperature. The serial port has three output modes.

Ultimeter 100 HRO Price \$199.95

The Ultimeter 100 automatically stores today's and yesterday's highs, lows and total rainfall so you can compare the readings. Also stores long term high, low and rain information since it was last reset. Has a 3-mode serial port for interfacing telephone, modem or radio reporting.



Weather Picture HRO Price \$389.95 (aluminum version)

The Weather Picture receives data from an Ultimeter and continuously displays your pre-selected data. The 8 inch compass rose and big 0.8 inch illuminated red numerals are clearly visible day or night. View even from across the room.

Catalog Prices

**HRO
discount prices
shown are
current as of
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when this
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General Information for Our Valued Customers

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Twelve toll-free 800 numbers are available for orders. They are located throughout the United States. This provides personnel at one location or another to answer your questions for extended hours Monday through Saturday. You will find the same low prices at all locations and, thanks to computers, we have the stock levels of all locations available to each salesperson for estimates of availability and delivery.

24 Hour "On-Line" Ordering is now available on the INTERNET! URL is <http://www.hamradio.com>

Shipments are made from any of our 12 locations that has the particular items you need in stock. In most cases, the shipment will be made from the location nearest you (if stock is available). HRO is trying to provide the quickest shipments in the industry using these methods.

California customers can now order using toll-free numbers to speak to their California store of choice.

Sales Tax

State and local laws require us to collect and remit State sales / use tax on orders shipped from any of our 12 locations INTO Arizona, California, Colorado, Georgia, or Virginia.

You will find that this small extra charge will be more than overcome by the convenience of the largest ham radio inventories in the United States. You will also find courteous and knowledgeable salespeople to assist you. We think you will find HRO to be the company you want backing you when it comes to dealing with any problems you might have with manufacturers or shipping companies.

Phone Orders

To place a phone order using a credit card, please have the following information available if you are a first-time caller or have not made a recent purchase from HRO.

We will ask for your callsign (if any), credit card number, expiration date, your home telephone number, and possibly the name, address, and telephone number of the bank listed on your charge card statement.

Payment

We accept Visa, MasterCard, American Express, and Discover Card. Personal checks are also accepted; however, processing time will delay shipment by some 10 days.

When using a credit card, please have the card in front of you since we will need all the information, including the name of the issuing bank. If the card holder's BILLING address differs from the shipping address, please be sure to specify both addresses and telephone numbers. For your protection, we thoroughly investigate the validity of all credit card purchases.

COD Orders

COD payments must be made in cashiers check or money order at the time of delivery. There is a small fee for COD shipments.

Commercial Sales Purchase Orders

Written purchase orders will be accepted from city, state, and federal agencies, and, with prior approval of credit, from commercial organizations. HRO quotes, in most cases, prices that require payment on receipt of merchandise. You may find a surcharge for credit terms applied to your pricing. Please indicate that you require terms when calling for price quotes.

Delivery

Free UPS Ground Transportation in the continental US on most items over \$100.

All Alaska and Hawaii shipments via UPS must be shipped by Blue Label (2nd Day Air) or Red Label (Overnight). Please ask for charges.

In a Hurry? If necessary to expedite shipments, UPS has Red Label (overnight), Blue Label (2nd-day) and Orange Label (3 day) services available at an extra cost. Please request charges for these services.

Foreign Deliveries We ship world-wide. Contact our stores, preferably by fax, with your needs. We can give you quotes and details for placing your foreign order. Payment methods include wire transfer direct to our bank as well as payment by VISA/ MC charge cards or check drawn in U.S. Funds from a U.S. Bank. Shipments are made (depending on size) by UPS, FED EX, Emery, DHL, or international air mail. Some orders to some foreign countries cannot be insured to the full value.

Truck Delivery On day of delivery, if by truck, please be sure to have enough help, and / or proper equipment on hand for unloading merchandise. Truck drivers are NOT required to provide assistance. If you are not experienced at handling large, awkward items such as towers, antennas or amplifiers, please ask properly trained people to assist you.

Canadian Orders can now be shipped via UPS. These costs will be added to your invoice.

Damaged Items

UPS If the item is obviously damaged, note this with the driver and refuse shipment. This item will be returned to HRO and another will be sent at no additional charge. If hidden damage is noted, contact UPS as soon as possible. They will arrange pickup. Once the item is received by HRO, a replacement will be sent.

TRUCK If there is damage or the shipment is short, it is the customer's responsibility to file the claim with the trucking company. At the time of receipt of item, it is recommended that you have the driver write "damaged" or indicate shortage on the bill of lading he gives to you. Be sure to have the same notation as well as drivers signature on his copy also.

MAIL It is the customer's responsibility to file all loss or damage claims with the postal department.

Prices

Many prices shown are suggested list price. In most cases we offer large discounts. Equipment manufacturers constantly change prices, offer specials or react to the Dollar / Yen exchange rates. Simply call one of our 800 numbers and our staff will be happy to quote you the current selling price of the item you are interested in. Prices are subject to change without notice or obligation to the customer. Sorry, we cannot honor typos in this catalog.

Software

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

Lost Items

When your order is delivered, please carefully count items and if anything is missing, notify HRO at once.

Occasionally, cartons shipped at the same time will arrive at their destination two or three days apart.

If you notify HRO within 10 days, we will replace lost or damaged items after completion of proper documentation and acceptance by the shipping agency.

New Equipment Returns

Products are not sold for evaluation. Under some circumstances (at the discretion of HRO) and with prior approval of the store of purchase, HRO will accept an item for return. Under most circumstances a 15% restocking fee and all freight charges will be assessed.

Your means of refund for returns will be the same as that used for your original payment except for cash, which will be refunded by check. HRO will pay from its corporate offices. It can take up to two weeks.

Defective merchandise may be returned within 10 days of the original purchase for exchange. Original receipt must accompany the return. Items returned for warranty replacement consideration must also include a completed, signed, "Warranty Replacement Certification Form." Customers who return equipment for replacement consideration without this form completed and signed cannot be considered for any possible warranty replacement, only warranty repair. No exceptions. Contact your salesman for details.

Manufacturer's New Equipment Warranties

Ham Radio Outlet supports all manufacturers' warranties. Actual warranty terms are included within the shipping container of most items. If needed, you may request from any of our locations a free copy of the manufacturer's written terms for any warranted product. Please request by model number and indicate the page in this catalog that represents the product.

Ham Radio Outlet will in many cases provide in-store repairs; please contact the store of purchase for information. It will be necessary to provide us with the invoice number and purchase date, as most manufacturers need this information to process under their FREE warranty repair terms.

New Equipment Warranty Returns

When returning equipment for repair, please pack the item in original packing material or something similar to provide adequate protection during the shipping process. Note on box: "ATTENTION SERVICE." Include a copy of your purchase invoice, and a complete and detailed description of the problems. Without the invoice or a complete description, delays will be experienced in providing the proper service and returning the item to you. Be sure to insure the package for its replacement cost.

HRO will repair or replace the defective item at our option. If the item is found to be defective under the terms of the manufacturer's warranty, no charge will be made for service or return shipping within continental USA. It is the customer's responsibility to ship all defective items to the service center for warranty repair.

Problems

HRO prides itself in its ability to service the customer. If there is a problem please contact the manager of the store from which you purchased the merchandise. If for some reason, your problem cannot be remedied by that store manager, please feel free to call Ham Radio Outlet Corporate Headquarters at (925) 831-1771 and explain the situation. At this point our national sales staff will see that your problem is addressed.

Thank You for choosing

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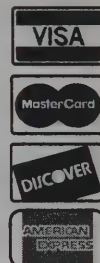
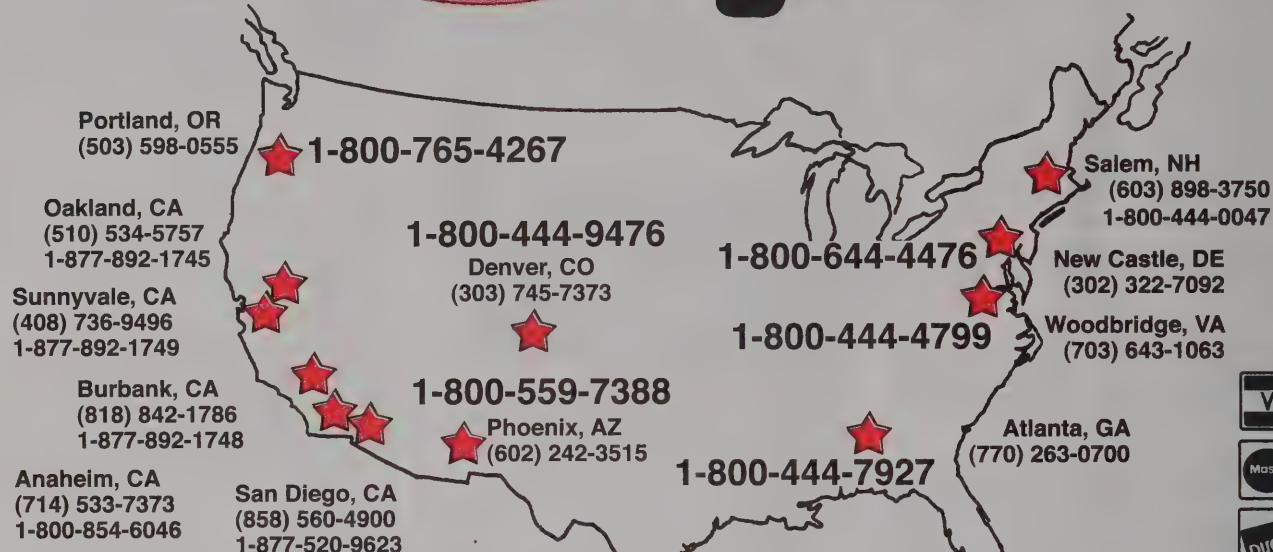
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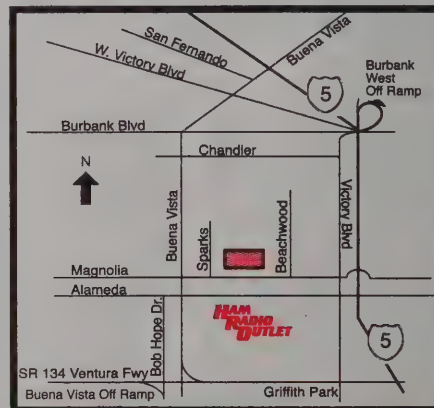


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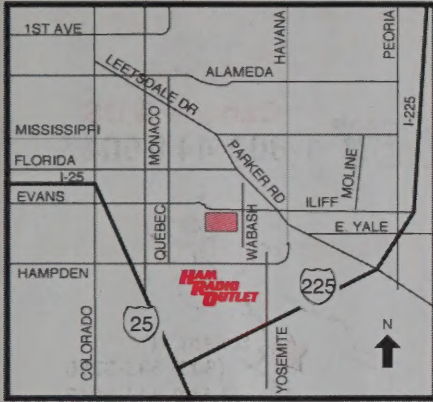
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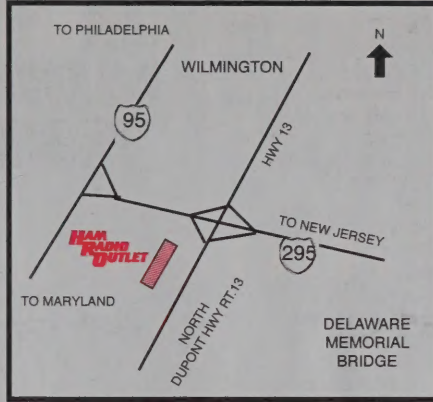
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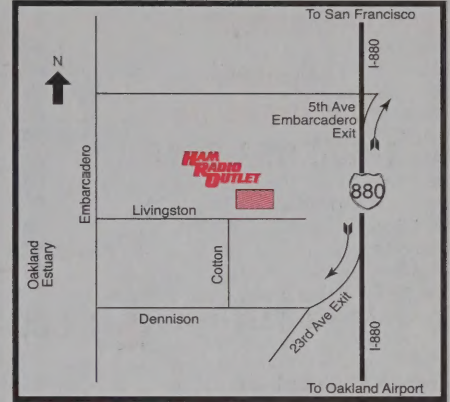
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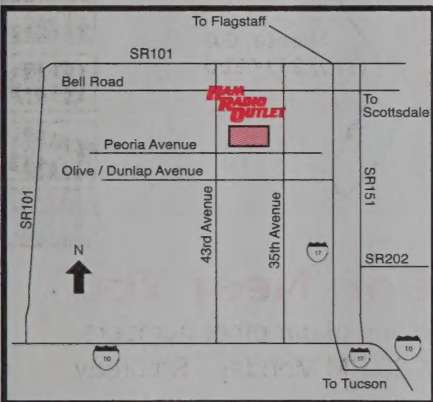
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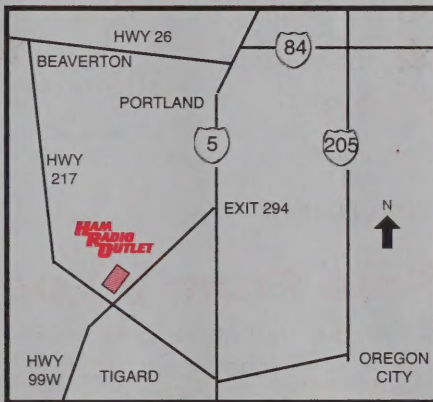
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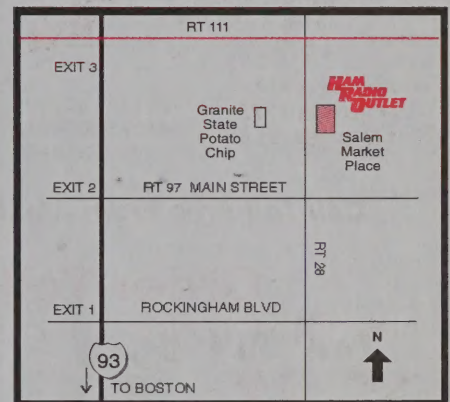
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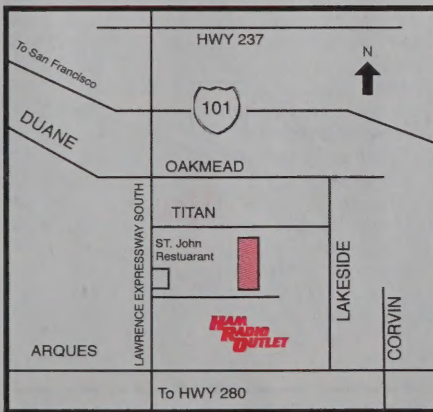
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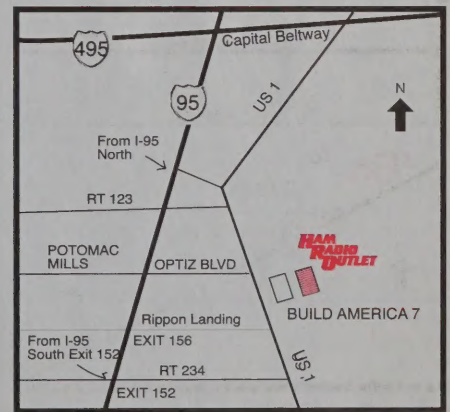
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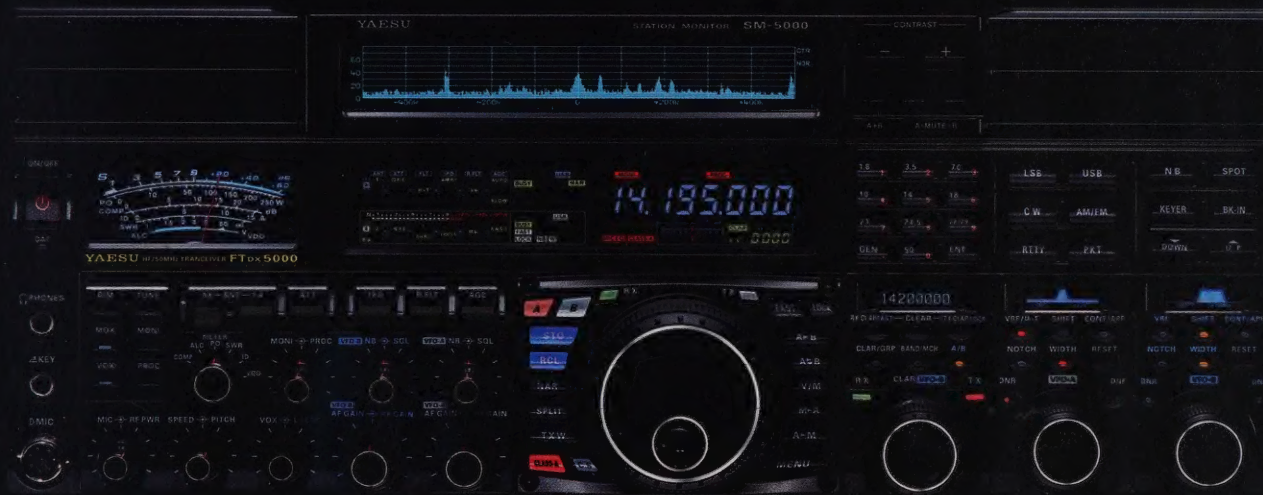
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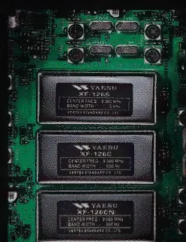
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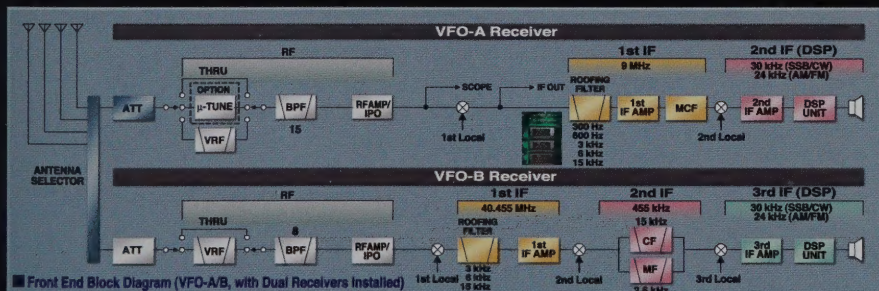
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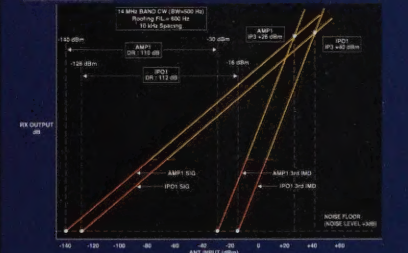


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